

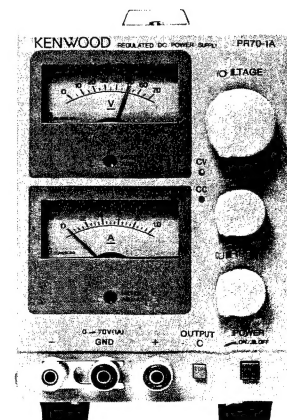
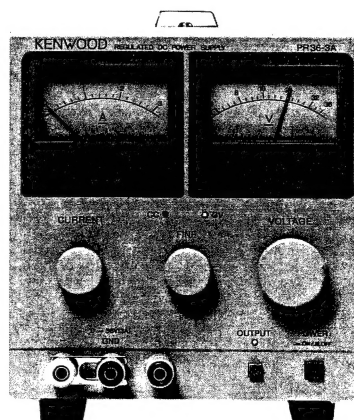
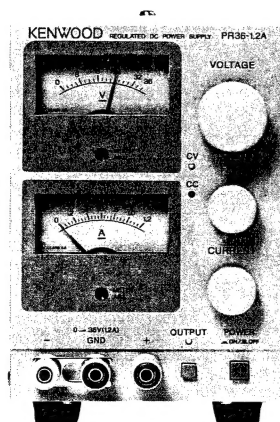
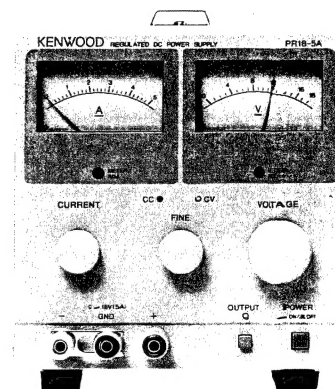
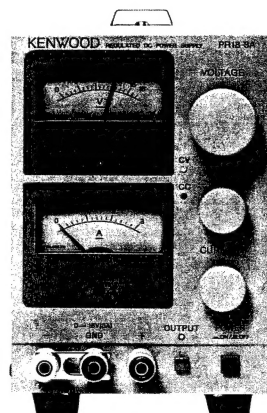
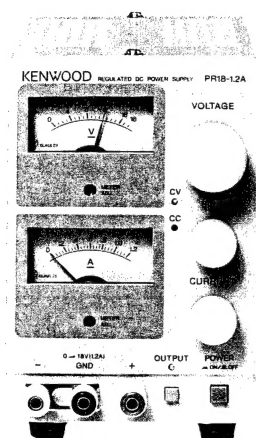
KENWOOD

REGULATED DC POWER SUPPLY

PR18-1.2A PR18-3A  
PR18-5A PR36-1.2A  
PR36-3A PR70-1A

## SERVICE MANUAL

KENWOOD CORPORATION



# ADJUSTMENT

To obtain the best performance, periodically calibrate the unit. Sometimes, only one mode need be calibrated, while at other times, all modes should be calibrated. When one mode is calibrated, it must be noted that the other modes may be affected. When calibrating all modes, perform the calibration in the specified sequence.

The following calibration required an accurate measuring instrument and an insulated adjusting flat blade screwdriver. If they are not available, contact your dealer. For optimum adjustment, turn the power on and warm up the scope sufficiently (more than 30 minutes) before starting. Before calibrating the scope, check the power supply voltage.

## TEST EQUIPMENT REQUIRED

The following instrument or their equivalent should be used for making adjustment.

Multimeter 45 FLUKE

## PREPARATION FOR ADJUSTMENT

### Control Settings

The control settings listed below must be used for each adjustment procedure.

Exceptions to these settings will be noted as they occur. After completing a adjustment, return the controls to the following settings.

| NAME OF KNOBS              | POSITION        |
|----------------------------|-----------------|
| CURRENT<br>FINE<br>VOLTAGE | Fully Clockwise |

| Item    | Adjustment VR    | Procedure   | Refer to Table 1. |
|---------|------------------|---|-------------------|
| Voltage | VR1<br>(V. ADJ)  | Turn VR1 clockwise to adjust the to the output voltage setting, then turn the FINE control to adjust to the rated voltage.<br>(Before this adjustment, set VR1 to VR3 to the fully counterclockwise positions.) |                   |
| Current | VR2<br>(A. ADJ)  | Connect a load and turn VR2 to adjust to the output current setting.  |                   |
| A meter | VR3<br>(AM. CAL) | Set the load for the rated current, and adjust the swing of the ammeter of the main unit with VR3.  |                   |

| Specifications<br>Model | Output voltage<br>setting<br>[V] | Output current<br>setting<br>[A] |
|-------------------------|----------------------------------|----------------------------------|
| PR18-1.2A               | 18.5                             | 1.28                             |
| PR18-3A                 |                                  | 3.19                             |
| PR18-5A                 |                                  | 5.3                              |
| PR36-1.2A               | 37                               | 1.28                             |
| PR36-3A                 |                                  | 3.19                             |
| PR70-1A                 | 72                               | 1.06                             |

Table 1

# PARTS LIST

## PR18-1.2A Y86-1850-00

| REF. NO     | PARTS NO                       | NAME & DESCRIPTION |
|-------------|--------------------------------|--------------------|
| A01-1236-08 | COVER                          |                    |
| A63-0112-08 | FRONT PANEL                    |                    |
| B31-0755-08 | METER;VOLT                     |                    |
| B31-0756-08 | METER;CURRENT                  |                    |
| B40-2737-24 | SERIAL NO. PLATE               |                    |
| B42-3731-08 | MASTER/SLAVE LABEL             |                    |
| B42-3734-08 | RATING:AC100V 50/60HZ 45W      |                    |
| B42-3735-08 | FUSE RATING LABEL              |                    |
| B42-3749-08 | RATING:AC120V 50/60HZ 45W      |                    |
| B42-3750-08 | RATING:AC220V 50/60HZ 45W      |                    |
| B42-3751-08 | RATING:AC240V 50/60HZ 45W      |                    |
| B42-3752-08 | RATING:AC120V 60HZ 45W         |                    |
| B63-0173-00 | INSTRUCTION MANUAL;JAPANESE    |                    |
| B63-0174-00 | INSTRUCTION MANUAL;ENGLISH     |                    |
| E21-0670-03 | TERMINAL,RED                   |                    |
| E21-0671-03 | TERMINAL,BLACK                 |                    |
| E21-0672-03 | TERMINAL,WHITE                 |                    |
| E29-0506-04 | SHORTING BAR                   |                    |
| E29-0542-08 | LUG;M3                         |                    |
| E30-0027-35 | UL/CSA POWER CORD              |                    |
| E30-0545-05 | JIS POWER CORD                 |                    |
| E30-0571-15 | SAA POWER CORD                 |                    |
| E30-1815-05 | CEE POWER CORD                 |                    |
| E30-1867-05 | BS POWER CORD                  |                    |
| F01-0884-08 | HEAT SINK                      |                    |
| F05-8013-08 | FUSE(5X20MM) 0.8A/250V         |                    |
| F05-8015-08 | FUSE(6X32MM) 0.8A/250V         |                    |
| F29-0515-08 | INSULATOR;FOR Q6               |                    |
| F51-0007-08 | FUSE 1.5A/125V                 |                    |
| H10-2853-08 | FOAMED STYRENE PAD (FRONT)     |                    |
| H10-2854-08 | FOAMED STYRENE PAD (REAR)      |                    |
| H10-2855-08 | STYRENE PAD;83X115X30MM        |                    |
| H10-2858-08 | STYRENE PAD;154X205X30MM       |                    |
| H20-1734-08 | VINYL COVER                    |                    |
| H53-0111-08 | CARTON BOX                     |                    |
| J02-0529-08 | FOOT                           |                    |
| J19-1671-08 | CLAMPER;FOR 2-CORE AC CORD     |                    |
| J19-1672-08 | CLAMPER;FOR 3-CORE AC CORD     |                    |
| J21-4720-08 | BRACKET;FOR P.C.B              |                    |
| J21-4758-08 | BRACKET;FOR AC CORD BUSHING    |                    |
| J30-0635-08 | VOLUME SPACER;FOR VR01         |                    |
| J42-0083-05 | BUSHING;FOR 2-CORE AC CORD     |                    |
| J42-0085-05 | BUSHING;FOR 3-CORE AC CORD     |                    |
| K21-0907-14 | KNOB                           |                    |
| K21-0911-04 | KNOB;FINE/CURRENT              |                    |
| K24-3006-04 | KNOB,OUTPUT                    |                    |
| K27-0509-04 | PUSH BUTTON,ORANGE;POWER       |                    |
| L07-1516-08 | POWER TRANSFORMER              |                    |
| N09-0718-05 | SCREW,SEMS PAN HD M3X6         |                    |
| N09-0720-05 | SCREW,SEMS PAN HD M4X10        |                    |
| N09-0757-05 | SCREW,SEMS BINDING TAPTITE 3X6 |                    |
| N09-0789-05 | SCREW,SEMS PAN HD M3X10        |                    |
| N09-0797-08 | SCREW,SEMS TAPTITE 3X10        |                    |
| N14-0404-04 | FLANGE NUT M3                  |                    |
| N89-3006-41 | SCREW,BINDING TAPTITE 3X6      |                    |
| N89-3010-41 | SCREW,BINDING TAPTITE 3X10     |                    |
| S40-2533-08 | PUSH SWITCH;POWER              |                    |
| W02-2267-08 | AMP UNIT                       |                    |
| VR01        | R29-3503-08                    | VOLUME 10K         |
| VR02        | R39-0800-08                    | VOLUME 1K          |
| VR03        | R29-3504-08                    | VOLUME 10K         |

## PR18-1.2A AMP UNIT W02-2267-08

| REF. NO     | PARTS NO                       | NAME & DESCRIPTION             |
|-------------|--------------------------------|--------------------------------|
| E21-0674-08 | EXTERNAL OUTPUT TERMINAL       |                                |
| E40-7141-08 | PIN CONNECTOR 2P(LINE VOLTAGE) |                                |
| E40-7142-08 | PIN CONNECTOR 1P(LINE VOLTAGE) |                                |
| J13-0518-08 | FUSE CLIP;FOR 6X30MM           |                                |
| J73-0326-08 | PCB (UNMOUNTED)                |                                |
| R92-0150-05 | JUMPING RES. ZERO OHM(10MM)    |                                |
| R92-1061-05 | JUMPING RES. ZERO OHM(5MM)     |                                |
| C1          | C90-3023-08                    | CAP. ELECTRO 470 105°C 35V     |
| C2          | CQ92M1H102K                    | CAP. MYLAR 1000P 10% 50V       |
| C3          | C91-2559-08                    | CAP. CERAMIC 0.1 0.25P 50V     |
| C4          | CQ92M1H472K                    | CAP. MYLAR 4700P 10% 50V       |
| C5          | CQ92M1H103K                    | CAP. MYLAR 0.01 10% 50V        |
| C6          | NO USE                         |                                |
| C7          | C90-3020-08                    | CAP. ELECTRO 100 105°C 25V     |
| C8          | CF93AN2ER22K                   | CAP. POLYESTER 0.22P 10% 250V  |
| C9          | NO USE                         |                                |
| C10         | C90-3021-08                    | CAP. ELECTRO 2200 105°C 35V    |
| C11         | CF93AN1JR22K                   | CAP. POLYESTER 0.22P 10% 63V   |
| C22         | C91-2559-08                    | CAP. CERAMIC 0.1 0.25P 50V     |
| C26         | C90-3174-08                    | CAP. ELECTRO 10 1% 50V         |
| C27         | NO USE                         |                                |
| C28         | C90-3020-08                    | CAP. ELECTRO 100 105°C 25V     |
| C29         | C91-2559-08                    | CAP. CERAMIC 0.1 0.25P 50V     |
| C32         | CF93AN1J1R0K                   | CAP. POLYESTER 1P 10% 63V      |
| CN1         | E40-7218-08                    | PIN CONNECTOR 2P               |
| CN2         | E40-7344-08                    | PIN CONNECTOR 3P               |
| CN3         | NO USE                         |                                |
| CN4         | E40-7126-08                    | PIN CONNECTOR 2P               |
| CN5         | E40-7219-08                    | PIN CONNECTOR 3P               |
| CN6         | NO USE                         |                                |
| CN7         | E40-7229-08                    | PIN CONNECTOR 4P               |
| CN11        | E40-7332-08                    | PIN CONNECTOR 4P               |
| CN12        | E40-7333-08                    | PIN CONNECTOR 2P               |
| CN13        | E40-7333-08                    | PIN CONNECTOR 2P               |
| CN18        | E40-7440-08                    | CONNECTOR                      |
| CN23        | E40-3240-05                    | PIN CONNECTOR 5P               |
| CN24        | E40-7333-08                    | PIN CONNECTOR 2P               |
| C01         | C90-3018-08                    | CAP. ELECTRO 1 105°C 50V       |
| C01         | C91-1323-08                    | CAP. CERAMIC 0.1 20% 250V      |
| C02         | NO USE                         |                                |
| C03         | C90-3046-08                    | CAP. ELECTRO 100 105°C 50V     |
| D1          | 1B4H42                         | DIODE,STACK                    |
| D2          | ERA15-01                       | DIODE                          |
| D3          | 1SS270A                        | DIODE                          |
| D4          | 1SS270A                        | DIODE                          |
| D5          | 1SS270A                        | DIODE                          |
| D6          | 1SS270A                        | DIODE                          |
| D7          | 1SS270A                        | DIODE                          |
| D8          | NO USE                         |                                |
| D9          | D3SB60                         | DIODE,STACK                    |
| D14         | 1SS270A                        | DIODE                          |
| D15         | 1SS270A                        | DIODE                          |
| D16         | 1SS270A                        | DIODE                          |
| D28         | 1SS270A                        | DIODE                          |
| D33         | ERA15-01                       | DIODE                          |
| D34         | 1SS270A                        | DIODE                          |
| D37         | ERA15-01                       | DIODE                          |
| D38         | 1SS270A                        | DIODE                          |
| D39         | ERA15-01                       | DIODE                          |
| D01         | ERA15-01                       | DIODE                          |
| IC1         | UPC151C                        | IC,OP AMP                      |
| IC2         | UPC151C                        | IC,OP AMP                      |
| IC3         | UPC1093J                       | IC,VARIABLE SHUNT REGULATOR    |
| IC9         | HA178L12A                      | IC,TERMINAL FIXED VOLTAGE REG. |
| LED1        | LN222RP                        | LED;RED                        |
| LED2        | LN322GP                        | LED;GREEN                      |
| LED01       | LN222RP                        | LED;RED                        |
| Q1          | 2SC1815(GR)                    | TR. SI, NPN                    |
| Q2          | 2SC1815(GR)                    | TR. SI, NPN                    |
| Q3          | 2SC1815(GR)                    | TR. SI, NPN                    |
| Q4          | 2SC1815(GR)                    | TR. SI, NPN                    |

# PARTS LIST

| REF. NO | PARTS NO      | NAME & DESCRIPTION           |
|---------|---------------|------------------------------|
| Q5      | 2SC1815(GR)   | TR. SI, NPN                  |
| Q6      | 2SD1148(O)    | TR. SI, NPN                  |
| Q7      | NO USE        |                              |
| Q8      | 2SC3421(Y)    | TR. SI, NPN                  |
| Q15     | 2SC1815(GR)   | TR. SI, NPN                  |
| Q16     | NO USE        |                              |
| Q17     | DTA143EF      | TR. DIGITAL                  |
| R1      | RD14BB2C122J  | RES. CARBON 1.2K 5% 1/6W     |
| R2      | RD14BB2C123J  | RES. CARBON 12K 5% 1/6W      |
| R2      | RD14DB2H302J  | RES. CARBON 3K 5% 1/2W       |
| R3      | RD14BB2C302J  | RES. CARBON 3K 5% 1/6W       |
| R4      | RD14BB2C510J  | RES. CARBON 51 5% 1/6W       |
| R5      | RD14BB2C682J  | RES. CARBON 6.8K 5% 1/6W     |
| R6      | RD14BB2C273J  | RES. CARBON 27K 5% 1/6W      |
| R7      | RN14BK2C5101F | RES. METAL FILM 5.1K 1% 1/6W |
| R8      | RD14BB2C202J  | RES. CARBON 2K 5% 1/6W       |
| R9      | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R10     | RD14BB2C472J  | RES. CARBON 4.7K 5% 1/6W     |
| R11     | RD14BB2C513J  | RES. CARBON 51K 5% 1/6W      |
| R12     | NO USE        |                              |
| R13     | RD14BB2C202J  | RES. CARBON 2K 5% 1/6W       |
| R14     | RD14BB2C152J  | RES. CARBON 1.5K 5% 1/6W     |
| R15     | RD14BB2C511J  | RES. CARBON 510 5% 1/6W      |
| R16     | RD14BB2C512J  | RES. CARBON 5.1K 5% 1/6W     |
| R17     | NO USE        |                              |
| R18     | RD14BB2C513J  | RES. CARBON 51K 5% 1/6W      |
| R19     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R20     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R21     | RN14BK2C1603F | RES. METAL FILM 160K 1% 1/6W |
| R22     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R23     | RN14BK2C9101F | RES. METAL FILM 9.1K 1% 1/6W |
| R24     | RN14BK2C3001F | RES. METAL FILM 3K 1% 1/6W   |
| R27     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R28     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R29     | RS14GB3D152J  | RES. METAL FILM 1.5K 5% 2W   |
| R40     | RN14BK2C1800F | RES. METAL FILM 180 1% 1/6W  |
| R44     | RD14BB2C101J  | RES. CARBON 100 5% 1/6W      |
| R45     | RD14DB2H202J  | RES. CARBON 2K 5% 1/2W       |
| R67     | RS14GB3DR43J  | RES. METAL FILM 0.43 5% 2W   |
| R74     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R75     | RD14DB2H202J  | RES. CARBON 2K 5% 1/2W       |
| R76     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R77     | NO USE        |                              |
| R78     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R79     | RD14DB2H102J  | RES. CARBON 1K 5% 1/2W       |
| R85     | RD14DB2H101J  | RES. CARBON 100 5% 1/2W      |
| R88     | RD14BB2C104J  | RES. CARBON 100K 5% 1/6W     |
| R89     | NO USE        |                              |
| R90     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R91     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R92     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R93     | RD14BB2C205J  | RES. CARBON 2K 5% 1/6W       |
| R94     | RD14BB2C100J  | RES. CARBON 10 5% 1/6W       |
| R95     | NO USE        |                              |
| R96     | RD14BB2C912J  | RES. CARBON 9.1K 5% 1/6W     |
| R01     | RN14BK2C1003F | RES. METAL FILM 100K 1% 1/6W |
| RY1     | S76-0604-08   | RELAY                        |
| RY2     | NO USE        |                              |
| RY3     | S76-0604-08   | RELAY                        |
| RY4     | S76-0630-08   | RELAY                        |
| SW1     | S68-0631-05   | OUTPUT SW                    |
| SW2     | S31-1512-08   | MASTER/SLAVE SWITCH          |
| VR1     | R12-1565-08   | RES. SEMI FIXED 2KB          |
| VR2     | R12-3568-08   | RES. SEMI FIXED 30KB         |
| VR3     | R12-0597-08   | RES. SEMI FIXED 100          |
| ZD1     | HZ56A         | DIODE, ZENER 5.75V           |

## PR18-3A

## Y86-1860-00

| REF. NO | PARTS NO    | NAME & DESCRIPTION              |
|---------|-------------|---------------------------------|
|         | A01-1237-08 | CASE                            |
|         | A63-0113-08 | FRONT PANEL                     |
|         | B31-0754-08 | METER: CURRENT                  |
|         | B31-0755-08 | METER: VOLT                     |
|         | B40-2737-24 | SERIAL NO. PLATE                |
|         | B42-3731-08 | MASTER/SLAVE LABEL              |
|         | B42-3733-08 | FUSE RATING LABEL               |
|         | B42-6035-08 | RATING: AC100V 50/60HZ 100W     |
|         | B42-6036-08 | RATING: AC120V 50/60HZ 100W     |
|         | B42-6037-08 | RATING: AC220V 50/60HZ 100W     |
|         | B42-6038-08 | RATING: AC240V 50/60HZ 100W     |
|         | B42-6039-08 | RATING: AC120V 60HZ 100W        |
|         | B63-0173-00 | INSTRUCTION MANUAL: JAPANESE    |
|         | B63-0174-00 | INSTRUCTION MANUAL: ENGLISH     |
|         | E21-0670-03 | TERMINAL, RED                   |
|         | E21-0671-03 | TERMINAL, BLACK                 |
|         | E21-0672-03 | TERMINAL, WHITE                 |
|         | E29-0506-04 | SHORTING BAR                    |
|         | E29-0542-08 | LUG: N3                         |
|         | E30-0027-35 | UL/CSA POWER CORD               |
|         | E30-0545-05 | JIS POWER CORD                  |
|         | E30-0571-15 | SAA POWER CORD                  |
|         | E30-1815-05 | CEE POWER CORD                  |
|         | E30-1867-05 | BS POWER CORD                   |
|         | F01-0885-08 | HEAT SINK                       |
|         | F05-2021-08 | FUSE(5X20MM) 2A/250V            |
|         | F05-2023-05 | FUSE(6X32MM) 2A/250V            |
|         | F29-0515-08 | INSULATOR: FOR Q6               |
|         | F29-0517-08 | INSULATOR: FOR Q6/Q11           |
|         | F51-0009-08 | FUSE(6X30MM) 3A/125V            |
|         | H10-2853-08 | FOAMED STYRENE PAD (FRONT)      |
|         | H10-2854-08 | FOAMED STYRENE PAD (REAR)       |
|         | H20-1734-08 | VINYL COVER                     |
|         | H53-0112-08 | CARTON BOX                      |
|         | J02-0529-08 | FOOT                            |
|         | J19-1671-08 | CLAMPER: FOR 2-CORE AC CORD     |
|         | J19-1672-08 | CLAMPER: FOR 3-CORE AC CORD     |
|         | J21-4720-08 | BRACKET: FOR P.C.B              |
|         | J21-4758-08 | BRACKET: FOR AC CORD BUSHING    |
|         | J29-0519-08 | BRACKET: FOR P.C.B              |
|         | J30-0635-08 | VOLUME SPACER: FOR VR01         |
|         | J42-0083-05 | BUSHING: FOR 2-CORE AC CORD     |
|         | J42-0085-05 | BUSHING: FOR 3-CORE AC CORD     |
|         | K01-0417-05 | HANDLE                          |
|         | K21-0907-14 | KNOB                            |
|         | K21-0911-04 | KNOB: FINE/CURRENT              |
|         | K24-3006-04 | KNOB: OUTPUT                    |
|         | K27-0509-04 | PUSH BUTTON, ORANGE: POWER      |
|         | L07-1517-08 | POWER TRANSFORMER               |
|         | N09-0718-05 | SCREW, SEMS PAN HD M3X6         |
|         | N09-0757-05 | SCREW, SEMS BINDING TAPTITE 3X6 |
|         | N09-0776-05 | SCREW, SEMS PAN HD M3X10        |
|         | N09-0777-05 | SCREW, SEMS PAN HD M4X6         |
|         | N09-0789-05 | SCREW, SEMS PAN HD M3X10        |
|         | N09-0797-08 | SCREW, SEMS TAPTITE 3X10        |
|         | N14-0404-04 | FLANGE NUT M3                   |
|         | N89-3006-41 | SCREW, BINDING TAPTITE 3X6      |
|         | N89-3012-41 | SCREW, BINDING TAPTITE 3X12     |
|         | S40-2533-08 | PUSH SWITCH: POWER              |
|         | M02-2268-08 | AMP UNIT                        |
| VR01    | R29-3503-08 | VOLUME 10K                      |
| VR02    | R29-1508-08 | VOLUME 1K                       |
| VR03    | R29-3504-08 | VOLUME 10K                      |

# PARTS LIST

## PR18-3A AMP UNIT

W02-2268-08

| REF. NO | PARTS NO     | NAME & DESCRIPTION             |
|---------|--------------|--------------------------------|
|         | E21-0674-08  | EXTERNAL OUTPUT TERMINAL       |
|         | E40-7141-08  | PIN CONNECTOR 2P(LINE VOLTAGE) |
|         | E40-7142-08  | PIN CONNECTOR 1P(LINE VOLTAGE) |
|         | J13-0518-08  | FUSE CLIP:FOR 6X30MM           |
|         | R92-0150-05  | JUMPING RES. ZERO OHM(10MM)    |
|         | R92-1061-05  | JUMPING RES. ZERO OHM(5MM)     |
| C1      | C90-3019-08  | CAP. ELECTRO 1000 105°C 35V    |
| C2      | CQ92M1H102K  | CAP. MYLAR 1000P 10% 50V       |
| C3      | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V     |
| C4      | CQ92M1H472K  | CAP. MYLAR 4700P 10% 50V       |
| C5      | CQ92M1H103K  | CAP. MYLAR 0.01 10% 50V        |
| C6      | NO USE       |                                |
| C7      | C90-3020-08  | CAP. ELECTRO 100 105°C 25V     |
| C8      | CF93AN2ER22K | CAP. POLYESTER 0.22P 10% 250V  |
| C9      | NO USE       |                                |
| C10     | C90-3021-08  | CAP. ELECTRO 2200 105°C 35V    |
| C11     | CF93AN1JR22K | CAP. POLYESTER 0.22P 10% 63V   |
| C22     | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V     |
| C26     | C90-3174-08  | CAP. ELECTRO 10 1% 50V         |
| C27     | NO USE       |                                |
| C28     | C90-3020-08  | CAP. ELECTRO 100 105°C 25V     |
| C29     | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V     |
| C32     | CF93AN1J1R0K | CAP. POLYESTER 1P 10% 63V      |
| CN1     | E40-7218-08  | PIN CONNECTOR 2P               |
| CN2     | E40-7344-08  | PIN CONNECTOR 3P               |
| CN3     | NO USE       |                                |
| CN4     | E40-7126-08  | PIN CONNECTOR 2P               |
| CN5     | E40-7219-08  | PIN CONNECTOR 3P               |
| CN6     | E40-7219-08  | PIN CONNECTOR 3P               |
| CN7     | E40-7229-08  | PIN CONNECTOR 4P               |
| CN8     | E40-7229-08  | PIN CONNECTOR 4P               |
| CN11    | E40-7332-08  | PIN CONNECTOR 4P               |
| CN12    | E40-7333-08  | PIN CONNECTOR 2P               |
| CN13    | E40-7333-08  | PIN CONNECTOR 2P               |
| CN18    | E40-7440-08  | CONNECTOR                      |
| CN23    | E40-3240-05  | PIN CONNECTOR 5P               |
| CN24    | E40-7333-08  | PIN CONNECTOR 2P               |
| C01     | C90-3018-08  | CAP. ELECTRO 1 105°C 50V       |
| C01     | C91-1323-08  | CAP. CERAMIC 0.1 20% 250V      |
| C02     | NO USE       |                                |
| C03     | C90-3046-08  | CAP. ELECTRO 100 105°C 50V     |
| D1      | 1B4B42       | DIODE,STACK                    |
| D2      | ERA15-01     | DIODE                          |
| D3      | 1SS270A      | DIODE                          |
| D4      | 1SS270A      | DIODE                          |
| D5      | 1SS270A      | DIODE                          |
| D6      | 1SS270A      | DIODE                          |
| D7      | 1SS270A      | DIODE                          |
| D8      | NO USE       |                                |
| D9      | D10XB40      | DIODE,STACK                    |
| D10     | ERA15-01     | DIODE                          |
| D14     | 1SS270A      | DIODE                          |
| D15     | 1SS270A      | DIODE                          |
| D16     | 1SS270A      | DIODE                          |
| D28     | 1SS270A      | DIODE                          |
| D33     | ERA15-01     | DIODE                          |
| D34     | 1SS270A      | DIODE                          |
| D37     | ERA15-01     | DIODE                          |
| D38     | 1SS270A      | DIODE                          |
| D39     | ERA15-01     | DIODE                          |
| D01     | 30D1         | DIODE                          |
| IC1     | UPC151C      | IC,OP AMP                      |
| IC2     | UPC151C      | IC,OP AMP                      |
| IC3     | UPC1093J     | IC,VARIABLE SHUNT REGULATOR    |
| IC9     | HA178L12A    | IC,TERMINAL FIXED VOLTAGE REG. |
| LED1    | LN222NP      | LED:RED                        |
| LED2    | LN322GP      | LED:GREEN                      |
| LED0    | LN222RP      | LED:RED                        |
| LED01   | LN222RP      | LED:RED                        |
| Q1      | 2SC1815(GR)  | TR. SI, NPN                    |
| Q2      | 2SC1815(GR)  | TR. SI, NPN                    |
| Q3      | 2SC1815(GR)  | TR. SI, NPN                    |

| REF. NO | PARTS NO      | NAME & DESCRIPTION           |
|---------|---------------|------------------------------|
| Q4      | 2SC1815(GR)   | TR. SI, NPN                  |
| Q5      | 2SC1815(GR)   | TR. SI, NPN                  |
| Q6      | 2SD1148(O)    | TR. SI, NPN                  |
| Q7      | 2SC2238(Y)    | TR. SI, NPN                  |
| Q8      | 2SC3421(Y)    | TR. SI, NPN                  |
| Q9      | 2SC1815(GR)   | TR. SI, NPN                  |
| Q10     | 2SC1815(GR)   | TR. SI, NPN                  |
| Q15     | 2SC1815(GR)   | TR. SI, NPN                  |
| Q16     | NO USE        |                              |
| Q17     | DTA143EF      | TR. DIGITAL                  |
| Q11A    | 2SD1148(O)    | TR. SI, NPN                  |
| Q11B    | 2SD1148(O)    | TR. SI, NPN                  |
| R1      | RD14BB2C122J  | RES. CARBON 1.2K 5% 1/6W     |
| R2      | RD14BB2C123J  | RES. CARBON 12K 5% 1/6W      |
| R2      | RD14BB2H302J  | RES. CARBON 3K 5% 1/2W       |
| R3      | RD14BB2C302J  | RES. CARBON 3K 5% 1/6W       |
| R4      | RD14BB2C510J  | RES. CARBON 51 5% 1/6W       |
| R5      | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R6      | RD14BB2C273J  | RES. CARBON 27K 5% 1/6W      |
| R7      | RN14BK2C5101F | RES. METAL FILM 5.1K 1% 1/6W |
| R8      | RD14BB2C202J  | RES. CARBON 2K 5% 1/6W       |
| R9      | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R10     | RD14BB2C511J  | RES. CARBON 510 5% 1/6W      |
| R11     | RD14BB2C513J  | RES. CARBON 51K 5% 1/6W      |
| R12     | NO USE        |                              |
| R13     | RD14BB2C202J  | RES. CARBON 2K 5% 1/6W       |
| R14     | RD14BB2C152J  | RES. CARBON 1.5K 5% 1/6W     |
| R15     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R16     | RD14BB2C512J  | RES. CARBON 5.1K 5% 1/6W     |
| R17     | NO USE        |                              |
| R18     | RD14BB2C513J  | RES. CARBON 51K 5% 1/6W      |
| R19     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R20     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R21     | RN14BK2C3303F | RES. METAL FILM 330K 1% 1/6W |
| R22     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R23     | RN14BK2C9101F | RES. METAL FILM 9.1K 1% 1/6W |
| R24     | RN14BK2C3001F | RES. METAL FILM 3K 1% 1/6W   |
| R27     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R28     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R29     | RS14GB3D152J  | RES. METAL FILM 1.5K 5% 2W   |
| R30     | RS14GB3AR33J  | RES. METAL FILM 0.33 5% 1W   |
| R34     | RD14BB2C122J  | RES. CARBON 1.2K 5% 1/6W     |
| R35     | RD14BB2C123J  | RES. CARBON 12K 5% 1/6W      |
| R36     | RD14BB2C302J  | RES. CARBON 3K 5% 1/6W       |
| R37     | RD14BB2C510J  | RES. CARBON 51 5% 1/6W       |
| R38     | RD14BB2C133J  | RES. CARBON 13K 5% 1/6W      |
| R39     | RD14BB2C273J  | RES. CARBON 27K 5% 1/6W      |
| R40     | RN14BK2C51R0F | RES. METAL FILM 51.0 1% 1/6W |
| R43     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R44     | RD14BB2C101J  | RES. CARBON 100 5% 1/6W      |
| R45     | RD14BB2H202J  | RES. CARBON 2K 5% 1/2W       |
| R67     | RS14GB3DR15J  | RES. METAL FILM 0.15 5% 2W   |
| R74     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R75     | RD14BB2H202J  | RES. CARBON 2K 5% 1/2W       |
| R76     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R77     | NO USE        |                              |
| R78     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R79     | RD14BB2H102J  | RES. CARBON 1K 5% 1/2W       |
| R85     | RD14BB2H101J  | RES. CARBON 100 5% 1/2W      |
| R88     | RD14BB2C104J  | RES. CARBON 100K 5% 1/6W     |
| R89     | NO USE        |                              |
| R90     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R91     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R92     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R93     | RD14BB2C205J  | RES. CARBON 2M 5% 1/6W       |
| R94     | RD14BB2C100J  | RES. CARBON 10 5% 1/6W       |
| R95     | NO USE        |                              |
| R96     | RD14BB2C912J  | RES. CARBON 9.1K 5% 1/6W     |
| R32A    | RS14GB3AR33J  | RES. METAL FILM 0.33 5% 1W   |
| R32B    | RS14GB3AR33J  | RES. METAL FILM 0.33 5% 1W   |
| R01     | RN14BK2C1003F | RES. METAL FILM 100K 1% 1/6W |
| RY1     | S76-0604-08   | RELAY                        |
| RY2     | S76-0604-08   | RELAY                        |
| RY3     | S76-0604-08   | RELAY                        |
| RY4     | S76-0630-08   | RELAY                        |
| SW1     | S68-0631-05   | OUTPUT SW                    |
| SW2     | S31-1512-08   | MASTER/SLAVE SWITCH          |
| VR1     | R12-1565-08   | RES. SEMI FIXED 2KB          |
| VR2     | R12-5547-08   | RES. SEMI FIXED 100KB        |
| VR3     | R12-0597-08   | RES. SEMI FIXED 100          |
| ZD1     | HZS6A         | DIODE, ZENER 5.75V           |

# PARTS LIST

## PR18-5A Y86-1870-00

| REF. NO | PARTS NO    | NAME & DESCRIPTION              |
|---------|-------------|---------------------------------|
|         | A01-1238-08 | COVER                           |
|         | A63-0114-08 | FRONT PANEL                     |
|         | B31-0757-08 | METER; VOLT                     |
|         | B31-0758-08 | METER; CURRENT                  |
|         | B40-2737-24 | SERIAL NO. PLATE                |
|         | B42-3731-08 | MASTER/SLAVE LABEL              |
|         | B42-3738-08 | FUSE RATING LABEL               |
|         | B42-6055-08 | RATING: AC100V 50/60HZ 165W     |
|         | B42-6056-08 | RATING: AC120V 50/60HZ 165W     |
|         | B42-6057-08 | RATING: AC220V 50/60HZ 165W     |
|         | B42-6058-08 | RATING: AC240V 50/60HZ 165W     |
|         | B42-6059-08 | RATING: AC120V 60HZ 165W        |
|         | B63-0173-00 | INSTRUCTION MANUAL: JAPANESE    |
|         | B63-0174-00 | INSTRUCTION MANUAL: ENGLISH     |
|         | E21-0670-03 | TERMINAL, RED                   |
|         | E21-0671-03 | TERMINAL, BLACK                 |
|         | E21-0672-03 | TERMINAL, WHITE                 |
|         | E29-0506-04 | SHORTING BAR                    |
|         | E29-0542-08 | LUG; M3                         |
|         | E30-0027-35 | UL/CSA POWER CORD               |
|         | E30-0545-05 | JIS POWER CORD                  |
|         | E30-0571-15 | SAA POWER CORD                  |
|         | E30-1815-05 | CEE POWER CORD                  |
|         | E30-1867-05 | BS POWER CORD                   |
|         | F01-0886-08 | HEAT SINK                       |
|         | F05-3022-05 | FUSE(6X32MM) 3A/250V            |
|         | F29-0517-08 | INSULATOR; FOR Q6/Q11           |
|         | F29-0518-08 | INSULATOR; FOR Q11A/Q11B/Q11C   |
|         | F50-0004-08 | FUSE(5X20MM) 3A/250V            |
|         | F51-0010-08 | FUSE(6X30MM) 5A/125V            |
|         | H10-2856-08 | FOAMED STYRENE PAD (FRONT)      |
|         | H10-2857-08 | FOAMED STYRENE PAD (REAR)       |
|         | H20-1734-08 | VINYL COVER                     |
|         | H53-0113-08 | CARTON BOX                      |
|         | J02-0529-08 | FOOT                            |
|         | J19-1671-08 | CLAMPER; FOR 2-CORE AC CORD     |
|         | J19-1672-08 | CLAMPER; FOR 3-CORE AC CORD     |
|         | J21-4720-08 | BRACKET; FOR P.C.B              |
|         | J21-4758-08 | BRACKET; FOR AC CORD BUSHING    |
|         | J30-0635-08 | VOLUME SPACER; FOR VR01         |
|         | J42-0083-05 | BUSHING; FOR 2-CORE AC CORD     |
|         | J42-0085-05 | BUSHING; FOR 3-CORE AC CORD     |
|         | K01-0417-05 | HANDLE                          |
|         | K21-0907-14 | KNOB                            |
|         | K21-0911-04 | KNOB; FINE/CURRENT              |
|         | K24-3006-04 | KNOB; OUTPUT                    |
|         | K27-0509-04 | PUSH BUTTON, ORANGE; POWER      |
|         | L07-1518-08 | POWER TRANSFORMER               |
|         | N09-0718-05 | SCREW, SEMS PAN HD M3X6         |
|         | N09-0757-05 | SCREW, SEMS BINDING TAPTITE 3X6 |
|         | N09-0776-05 | SCREW, SEMS PAN HD M3X10        |
|         | N09-0777-05 | SCREW, SEMS PAN HD M4X6         |
|         | N09-0789-05 | SCREW, SEMS PAN HD M3X10        |
|         | N09-0797-08 | SCREW, SEMS TAPTITE 3X10        |
|         | N14-0404-04 | FLANGE NUT M3                   |
|         | N89-3006-41 | SCREW, BINDING TAPTITE 3X6      |
|         | N89-3012-41 | SCREW, BINDING TAPTITE 3X12     |
|         | S40-2533-08 | PUSH SWITCH; POWER              |
|         | W02-2269-08 | AMP UNIT                        |
| VR01    | R29-3503-08 | VOLUME 10K                      |
| VR02    | R29-1508-08 | VOLUME 1K                       |
| VR03    | R29-3504-08 | VOLUME 10K                      |

## PR18-5A AMP UNIT W02-2269-08

| REF. NO | PARTS NO     | NAME & DESCRIPTION              |
|---------|--------------|---------------------------------|
|         | E21-0674-08  | EXTERNAL OUTPUT TERMINAL        |
|         | E40-7141-08  | PIN CONNECTOR 2P(LINE VOLTAGE)  |
|         | E40-7142-08  | PIN CONNECTOR 1P(LINE VOLTAGE)  |
|         | J13-0518-08  | FUSE CLIP; FOR 6X30MM           |
|         | J73-0326-08  | PCB (UNMOUNTED)                 |
|         | R92-0150-05  | JUMPING RES. ZERO OHM(10MM)     |
|         | R92-1061-05  | JUMPING RES. ZERO OHM(5MM)      |
| C1      | C90-3019-08  | CAP. ELECTRO 1000 105°C 35V     |
| C2      | C992M1H102K  | CAP. MYLAR 1000P 10% 50V        |
| C3      | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V      |
| C4      | C992M1H472K  | CAP. MYLAR 4700P 10% 50V        |
| C5      | C992M1H103K  | CAP. MYLAR 0.01 10% 50V         |
| C6      | NO USE       |                                 |
| C7      | C90-3020-08  | CAP. ELECTRO 100 105°C 25V      |
| C8      | CF93AN2ER22K | CAP. POLYESTER 0.22P 10% 250V   |
| C9      | NO USE       |                                 |
| C10     | C90-3024-08  | CAP. ELECTRO 3300 105°C 35V     |
| C11     | CF93AN1JR22K | CAP. POLYESTER 0.22P 10% 63V    |
| C22     | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V      |
| C26     | C90-3174-08  | CAP. ELECTRO 10 1% 50V          |
| C27     | NO USE       |                                 |
| C28     | C90-3020-08  | CAP. ELECTRO 100 105°C 25V      |
| C29     | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V      |
| C32     | CF93AN1JR0K  | CAP. POLYESTER 1P 10% 63V       |
| CN1     | E40-7218-08  | PIN CONNECTOR 2P                |
| CN2     | E40-7344-08  | PIN CONNECTOR 3P                |
| CN3     | NO USE       |                                 |
| CN4     | E40-7126-08  | PIN CONNECTOR 2P                |
| CN5     | E40-7219-08  | PIN CONNECTOR 3P                |
| CN6     | E40-7219-08  | PIN CONNECTOR 3P                |
| CN7     | E40-7229-08  | PIN CONNECTOR 4P                |
| CN8     | E40-7229-08  | PIN CONNECTOR 4P                |
| CN11    | E40-7332-08  | PIN CONNECTOR 4P                |
| CN12    | E40-7333-08  | PIN CONNECTOR 2P                |
| CN13    | E40-7333-08  | PIN CONNECTOR 2P                |
| CN18    | E40-7440-08  | CONNECTOR                       |
| CN23    | E40-3240-05  | PIN CONNECTOR 5P                |
| CN24    | E40-7333-08  | PIN CONNECTOR 2P                |
| C01     | C90-3018-08  | CAP. ELECTRO 1 105°C 50V        |
| C01     | C91-1323-08  | CAP. CERAMIC 0.1 20% 250V       |
| C02     | NO USE       |                                 |
| C03     | C90-3046-08  | CAP. ELECTRO 100 105°C 50V      |
| D1      | 1B4B42       | DIODE, STACK                    |
| D2      | ERA15-01     | DIODE                           |
| D3      | 1SS270A      | DIODE                           |
| D4      | 1SS270A      | DIODE                           |
| D5      | 1SS270A      | DIODE                           |
| D6      | 1SS270A      | DIODE                           |
| D7      | 1SS270A      | DIODE                           |
| D8      | NO USE       |                                 |
| D9      | D15XB40      | DIODE, STACK                    |
| D10     | ERA15-01     | DIODE                           |
| D14     | 1SS270A      | DIODE                           |
| D15     | 1SS270A      | DIODE                           |
| D16     | 1SS270A      | DIODE                           |
| D28     | 1SS270A      | DIODE                           |
| D33     | ERA15-01     | DIODE                           |
| D34     | 1SS270A      | DIODE                           |
| D37     | ERA15-01     | DIODE                           |
| D38     | 1SS270A      | DIODE                           |
| D39     | ERA15-01     | DIODE                           |
| D01     | 30D1         | DIODE                           |
| IC1     | UPC151C      | IC, OP AMP                      |
| IC2     | UPC151C      | IC, OP AMP                      |
| IC3     | UPC1093J     | IC, VARIABLE SHUNT REGULATOR    |
| IC9     | HA178L12A    | IC, TERMINAL FIXED VOLTAGE REG. |
| LED1    | LN322GP      | LED; GREEN                      |
| LED2    | LN222RP      | LED; RED                        |
| LED0    | LN222RP      | LED; RED                        |
| LED01   | LN222RP      | LED; RED                        |
| Q1      | 2SC1815(GR)  | TR. SI, NPN                     |
| Q2      | 2SC1815(GR)  | TR. SI, NPN                     |
| Q3      | 2SC1815(GR)  | TR. SI, NPN                     |

# PARTS LIST

W02-2269-08

| REF. NO | PARTS NO      | NAME & DESCRIPTION           |
|---------|---------------|------------------------------|
| Q4      | 2SC1815 (GR)  | TR. SI, NPN                  |
| Q5      | 2SC1815 (GR)  | TR. SI, NPN                  |
| Q6      | 2SD1148 (O)   | TR. SI, NPN                  |
| Q7      | 2SC2238 (Y)   | TR. SI, NPN                  |
| Q8      | 2SC3421 (Y)   | TR. SI, NPN                  |
| Q9      | 2SC1815 (GR)  | TR. SI, NPN                  |
| Q10     | 2SC1815 (GR)  | TR. SI, NPN                  |
| Q11     | 2SD1148 (O)   | TR. SI, NPN                  |
| Q15     | 2SC1815 (GR)  | TR. SI, NPN                  |
| Q16     | NO USE        |                              |
| Q17     | DTA143EF      | TR. DIGITAL                  |
| Q11A    | 2SD1148 (O)   | TR. SI, NPN                  |
| Q11B    | 2SD1148 (O)   | TR. SI, NPN                  |
| Q11C    | 2SD1148 (O)   | TR. SI, NPN                  |
| R1      | RD14BB2C122J  | RES. CARBON 1.2K 5% 1/6W     |
| R2      | RD14BB2C123J  | RES. CARBON 12K 5% 1/6W      |
| R2      | RD14DB2H302J  | RES. CARBON 3K 5% 1/2W       |
| R3      | RD14BB2C302J  | RES. CARBON 3K 5% 1/6W       |
| R4      | RD14BB2C510J  | RES. CARBON 51 5% 1/6W       |
| R5      | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R6      | RD14BB2C273J  | RES. CARBON 27K 5% 1/6W      |
| R7      | RN14BK2C5101F | RES. METAL FILM 5.1K 1% 1/6W |
| R8      | RD14BB2C202J  | RES. CARBON 2K 5% 1/6W       |
| R9      | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R10     | RD14BB2C101J  | RES. CARBON 100 5% 1/6W      |
| R11     | RD14BB2C513J  | RES. CARBON 51K 5% 1/6W      |
| R12     | NO USE        |                              |
| R13     | RD14BB2C202J  | RES. CARBON 2K 5% 1/6W       |
| R14     | RD14BB2C152J  | RES. CARBON 1.5K 5% 1/6W     |
| R15     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R16     | RD14BB2C512J  | RES. CARBON 5.1K 5% 1/6W     |
| R17     | NO USE        |                              |
| R18     | RD14BB2C513J  | RES. CARBON 51K 5% 1/6W      |
| R19     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R20     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R21     | RN14BK2C3303F | RES. METAL FILM 330K 1% 1/6W |
| R22     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R23     | RN14BK2C9101F | RES. METAL FILM 9.1K 1% 1/6W |
| R24     | RN14BK2C3001F | RES. METAL FILM 3K 1% 1/6W   |
| R27     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R28     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R29     | RS14GB3D152J  | RES. METAL FILM 1.5K 5% 2W   |
| R30     | RS14GB3AR33J  | RES. METAL FILM 0.33 5% 1W   |
| R31     | NO USE        |                              |
| R32     | RS14GB3AR33J  | RES. METAL FILM 0.33 5% 1W   |
| R33     | NO USE        |                              |
| R34     | RD14BB2C122J  | RES. CARBON 1.2K 5% 1/6W     |
| R35     | RD14BB2C123J  | RES. CARBON 12K 5% 1/6W      |
| R36     | RD14BB2C302J  | RES. CARBON 3K 5% 1/6W       |
| R37     | RD14BB2C510J  | RES. CARBON 51 5% 1/6W       |
| R38     | RD14BB2C133J  | RES. CARBON 13K 5% 1/6W      |
| R39     | RD14BB2C273J  | RES. CARBON 27K 5% 1/6W      |
| R40     | RN14BK2C51R0F | RES. METAL FILM 51.0 1% 1/6W |
| R43     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R44     | RD14BB2C101J  | RES. CARBON 100 5% 1/6W      |
| R45     | RD14DB2H202J  | RES. CARBON 2K 5% 1/2W       |
| R67     | RS14GB3DR12J  | RES. METAL FILM 0.12 5% 2W   |
| R74     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R75     | RD14DB2H202J  | RES. CARBON 2K 5% 1/2W       |
| R76     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R77     | NO USE        |                              |
| R78     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R79     | RD14DB2H102J  | RES. CARBON 1K 5% 1/2W       |
| R85     | RD14DB2H101J  | RES. CARBON 100 5% 1/2W      |
| R88     | RD14BB2C104J  | RES. CARBON 100K 5% 1/6W     |
| R89     | NO USE        |                              |
| R90     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R91     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R92     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R93     | RD14BB2C205J  | RES. CARBON 2K 5% 1/6W       |
| R94     | RD14BB2C100J  | RES. CARBON 10 5% 1/6W       |
| R95     | NO USE        |                              |
| R96     | RD14BB2C912J  | RES. CARBON 9.1K 5% 1/6W     |
| R32A    | RS14GB3AR33J  | RES. METAL FILM 0.33 5% 1W   |
| R32B    | RS14GB3AR33J  | RES. METAL FILM 0.33 5% 1W   |
| R32C    | RS14GB3AR33J  | RES. METAL FILM 0.33 5% 1W   |
| R01     | RN14BK2C4003F | RES. METAL FILM 100K 1% 1/6W |
| RY1     | S76-0604-08   | RELAY                        |
| RY2     | S76-0604-08   | RELAY                        |
| RY3     | S76-0604-08   | RELAY                        |
| RY4     | S76-0630-08   | RELAY                        |

| REF. NO | PARTS NO    | NAME & DESCRIPTION    |
|---------|-------------|-----------------------|
| SW1     | S68-0631-05 | OUTPUT SW             |
| SW2     | S31-1512-08 | MASTER/SLAVE SWITCH   |
| VR1     | R12-1565-08 | RES. SEMI FIXED 2KB   |
| VR2     | R12-5547-08 | RES. SEMI FIXED 100KB |
| VR3     | R12-0597-08 | RES. SEMI FIXED 100   |
| ZD1     | HZSGA       | DIODE, ZENER 5.75V    |



## PARTS LIST

## PR36-1.2A

**Y86-1880-00**

| REF. NO | PARTS NO    | NAME & DESCRIPTION             |
|---------|-------------|--------------------------------|
|         | A01-123G-08 | COVER                          |
|         | A63-0115-08 | FRONT PANEL                    |
|         | R31-0756-08 | METER;CURRENT                  |
|         | B31-0759-08 | METER;VOLT                     |
|         | B40-2737-24 | SERIAL NO. PLATE               |
|         | B42-3731-08 | MASTER/SLAVE LABEL             |
|         | B42-3740-08 | FUSE RATING LABEL              |
|         | B42-6025-08 | RATING:AC100V 50/60HZ 73W      |
|         | B42-6026-08 | RATING:AC120V 50/60HZ 73W      |
|         | B42-6027-08 | RATING:AC220V 50/60HZ 73W      |
|         | B42-6028-08 | RATING:AC240V 50/60HZ 73W      |
|         | B42-6029-08 | RATING:AC120V 60HZ 73W         |
|         | R63-0173-00 | INSTRUCTION MANUAL;JAPANESE    |
|         | R63-0174-00 | INSTRUCTION MANUAL;ENGLISH     |
|         | E21-0670-03 | TERMINAL,RED                   |
|         | E21-0671-03 | TERMINAL,BLACK                 |
|         | E21-0672-03 | TERMINAL,WHITE                 |
|         | E29-0506-04 | SHORTING BAR                   |
|         | E29-0542-08 | LUG;M3                         |
|         | E30-0027-35 | UL/CSA POWER CORD              |
|         | E30-0545-05 | JIS POWER CORD                 |
|         | E30-0571-15 | SAA POWER CORD                 |
|         | E30-1815-05 | CEE POWER CORD                 |
|         | E30-1867-05 | BS POWER CORD                  |
|         | F01-0884-08 | HEAT SINK                      |
|         | F05-1521-08 | FUSE(6X32MM) 1.5A/250V         |
|         | F29-0517-08 | INSULATOR;FOR Q6/Q11           |
|         | F50-0003-08 | FUSE(5X20MM) 1.5A/250V         |
|         | F51-0008-08 | FUSE(6X30MM) 2.5A/125V         |
|         | H10-2853-08 | FOAMED STYRENE PAD (FRONT)     |
|         | H10-2854-08 | FOAMED STYRENE PAD (REAR)      |
|         | H10-2855-08 | STYRENE PAD;83X115X30MM        |
|         | H10-2858-08 | STYRENE PAD;154X205X30MM       |
|         | H20-1734-08 | VINYL COVER                    |
|         | H53-0114-08 | CARTON BOX                     |
|         | J02-0529-08 | FOOT                           |
|         | J19-1671-08 | CLAMPER;FOR 2-CORE AC CORD     |
|         | J19-1672-08 | CLAMPER;FOR 3-CORE AC CORD     |
|         | J21-4720-08 | BACKET;FOR P.C.B               |
|         | J21-4758-08 | BACKET;FOR AC CORD BUSHING     |
|         | J30-0635-08 | VOLUME SPACER;FOR VR01         |
|         | J42-0083-05 | BUSHING;FOR 2-CORE AC CORD     |
|         | J42-0085-05 | BUSHING;FOR 3-CORE AC CORD     |
|         | K21-0907-14 | KNOB                           |
|         | K21-0911-04 | KNOB;FINE/CURRENT              |
|         | K24-3006-04 | KNOB,OUTPUT                    |
|         | K27-0509-04 | PUSH BUTTON,ORANGE;POWER       |
|         | L07-1519-08 | POWER TRANSFORMER              |
|         | N09-0718-05 | SCREW,SEMS PAN HD M3X6         |
|         | N09-0720-05 | SCREW,SEMS PAN HD M4X10        |
|         | N09-0757-05 | SCREW,SEMS BINDING TAPTITE 3X6 |
|         | N09-0789-05 | SCREW,SEMS PAN HD M3X10        |
|         | N09-0797-08 | SCREW,SEMS TAPTITE 3X10        |
|         | N14-0404-04 | FLANGE NUT M3                  |
|         | N89-3066-41 | SCREW,BINDING TAPTITE 3X6      |
|         | N89-3010-41 | SCREW,BINDING TAPTITE 3X10     |
|         | S40-2533-08 | PUSH SWITCH;POWER              |
|         | W02-2270-08 | AMP UNIT                       |
| VR01    | R29-3503-08 | VOLUME 10K                     |
| VR02    | R39-0800-08 | VOLUME 1K                      |
| VR03    | R29-3504-08 | VOLUME 10K                     |

### PR36-1.2A AMP UNIT

**W02-2270-08**

| REF. NO | PARTS NO     | NAME & DESCRIPTION              |
|---------|--------------|---------------------------------|
|         | E21-0674-08  | EXTERNAL OUTPUT TERMINAL        |
|         | E40-4142-08  | PIN CONNECTOR 1P                |
|         | E40-7141-08  | PIN CONNECTOR 2P (LINE VOLTAGE) |
|         | J13-0518-08  | FUSE CLIP: FOR 6X30MM           |
|         | J73-0326-08  | PCB (UNMOUNTED)                 |
|         | R92-0150-05  | JUMPING RES. ZERO OHM (10MM)    |
|         | R92-1061-05  | JUMPING RES. ZERO OHM (5MM)     |
| C1      | C90-3023-08  | CAP. ELECTRO 470 105°C 35V      |
| C2      | GQ92M1H102K  | CAP. NYLAR 1000P 10% 50V        |
| C3      | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V      |
| C4      | GQ92M1H472K  | CAP. NYLAR 4700P 10% 50V        |
| C5      | GQ92M1H103K  | CAP. NYLAR 0.01 10% 50V         |
| C6      | NO USE       |                                 |
| C7      | C90-3020-08  | CAP. ELECTRO 100 105°C 25V      |
| C8      | CF93AN2ER22K | CAP. POLYESTER 0.22P 10% 250V   |
| C9      | NO USE       |                                 |
| C10     | C90-3025-08  | CAP. ELECTRO 1000 105°C 63V     |
| C11     | CF93AN1JR22K | CAP. POLYESTER 0.22P 10% 63V    |
| C22     | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V      |
| C26     | C90-3174-08  | CAP. ELECTRO 10 1% 50V          |
| C27     | NO USE       |                                 |
| C28     | C90-3020-08  | CAP. ELECTRO 100 105°C 25V      |
| C29     | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V      |
| C32     | CF93AN1J1R0K | CAP. POLYESTER 1P 10% 63V       |
| CN1     | E40-7218-08  | PIN CONNECTOR 2P                |
| CN2     | E40-7344-08  | PIN CONNECTOR 3P                |
| CN3     | NO USE       |                                 |
| CN4     | E40-7126-08  | PIN CONNECTOR 2P                |
| CN5     | E40-7219-08  | PIN CONNECTOR 3P                |
| CN6     | NO USE       |                                 |
| CN7     | E40-7229-08  | PIN CONNECTOR 4P                |
| CN11    | E40-7332-08  | PIN CONNECTOR 4P                |
| CN12    | E40-7333-08  | PIN CONNECTOR 2P                |
| CN13    | E40-7333-08  | PIN CONNECTOR 2P                |
| CN18    | E40-7440-08  | CONNECTOR                       |
| CN23    | E40-3240-05  | PIN CONNECTOR 5P                |
| CN24    | E40-7333-08  | PIN CONNECTOR 2P                |
| C01     | C90-3018-08  | CAP. ELECTRO 1 105°C 50V        |
| C01     | C91-1323-08  | CAP. CERAMIC 0.1 20% 250V       |
| C02     | NO USE       |                                 |
| C03     | C90-3046-08  | CAP. ELECTRO 100 105°C 50V      |
| D1      | 1B4B42       | DIODE, STACK                    |
| D2      | ERA15-01     | DIODE                           |
| D3      | 1SS270A      | DIODE                           |
| D4      | 1SS270A      | DIODE                           |
| D5      | 1SS270A      | DIODE                           |
| D6      | 1SS270A      | DIODE                           |
| D7      | 1SS270A      | DIODE                           |
| D8      | NO USE       |                                 |
| D9      | D3SB60       | DIODE, STACK                    |
| D10     | ERA15-01     | DIODE                           |
| D14     | 1SS270A      | DIODE                           |
| D15     | 1SS270A      | DIODE                           |
| D16     | 1SS270A      | DIODE                           |
| D28     | 1SS270A      | DIODE                           |
| D33     | ERA15-01     | DIODE                           |
| D34     | 1SS270A      | DIODE                           |
| D37     | ERA15-01     | DIODE                           |
| D38     | 1SS270A      | DIODE                           |
| D39     | ERA15-01     | DIODE                           |
| D01     | ERA15-01     | DIODE                           |
| IC1     | UPC151C      | IC, OP AMP                      |
| IC2     | UPC151C      | IC, OP AMP                      |
| IC3     | UPC1093J     | IC, VARIABLE SHUNT REGULATOR    |
| IC9     | HA178L12A    | IC, TERMINAL FIXED VOLTAGE REG. |
| LED1    | LN222RP      | LED: RED                        |
| LED2    | LN322GP      | LED: GREEN                      |
| LED01   | LN222RP      | LED: RED                        |
| Q1      | 2SC1815 (GR) | TR. SI, NPN                     |
| Q2      | 2SC1815 (GR) | TR. SI, NPN                     |
| Q3      | 2SC1815 (GR) | TR. SI, NPN                     |

## PARTS LIST

**PR36-3A**

**Y86-1890-00**

| REF. NO | PARTS NO    | NAME & DESCRIPTION             |
|---------|-------------|--------------------------------|
|         | A01-1238-08 | COVER                          |
|         | A63-0116-08 | FRONT PANEL                    |
|         | B31-0760-08 | METER;VOLT                     |
|         | B31-0761-08 | METER;CURRENT                  |
|         | R40-2737-24 | SERIAL NO. PLATE               |
|         | B42-3731-08 | MASTER/SLAVE LABEL             |
|         | B42-3738-08 | FUSE RATING LABEL              |
|         | R42-6045-08 | RATING:AC100V 50/60HZ 170W     |
|         | B42-6046-08 | RATING:AC120V 50/60HZ 170W     |
|         | B42-6047-08 | RATING:AC220V 50/60HZ 170W     |
|         | R42-6048-08 | RATING:AC240V 50/60HZ 170W     |
|         | R42-6049-08 | RATING:AC120V 60HZ 170W        |
|         | B63-0173-00 | INSTRUCTION MANUAL:JAPANESE    |
|         | B63-0174-00 | INSTRUCTION MANUAL:ENGLISH     |
|         | E21-0670-03 | TERMINAL,RED                   |
|         | E21-0671-03 | TERMINAL,BLACK                 |
|         | E21-0672-03 | TERMINAL,WHITE                 |
|         | E29-0506-04 | SHORTING BAR                   |
|         | E29-0542-08 | LUG;M3                         |
|         | E30-0027-35 | UL/CSA POWER CORD              |
|         | E30-0545-05 | JIS POWER CORD                 |
|         | E30-0571-15 | SAA POWER CORD                 |
|         | E30-1815-05 | CEE POWER CORD                 |
|         | E30-1867-05 | BS POWER CORD                  |
|         | F01-0886-08 | HEAT SINK                      |
|         | F05-3022-05 | FUSE(6X32MM) 3A/250V           |
|         | F29-0517-08 | INSULATOR;FOR Q6/Q11           |
|         | F29-0518-08 | INSULATOR;FOR Q11A/Q11B/Q11C   |
|         | F50-0004-08 | FUSE(5X20MM) 3A/250V           |
|         | F51-0010-08 | FUSE(6X30MM) 5A/125V           |
|         | H10-2856-08 | FOAMED STYRENE PAD (FRONT)     |
|         | H10-2857-08 | FOAMED STYRENE PAD (REAR)      |
|         | H20-1734-08 | VINYL COVER                    |
|         | H53-0115-08 | CARTON BOX                     |
|         | J02-0529-08 | FOOT                           |
|         | J19-1671-08 | CLAMPER;FOR 2-CORE AC CORD     |
|         | J19-1672-08 | CLAMPER;FOR 3-CORE AC CORD     |
|         | J21-4720-08 | BRACKET;FOR P.C.B              |
|         | J21-4758-08 | BRACKET;FOR AC CORD BUSHING    |
|         | J30-0635-08 | VOLUME SPACER;FOR VR01         |
|         | J42-0083-05 | BUSHING;FOR 2-CORE AC CORD     |
|         | J42-0085-05 | BUSHING;FOR 3-CORE AC CORD     |
|         | K01-0417-05 | HANDLE                         |
|         | K21-0907-14 | KNOB                           |
|         | K21-0911-04 | KNOB;FINE/CURRENT              |
|         | K21-3006-04 | KNOB;OUTPUT                    |
|         | K27-0509-04 | PUSH BUTTON,ORANGE;POWER       |
|         | L07-1520-08 | POWER TRANSFORMER              |
|         | N09-0718-05 | SCREW,SEMS PAN HD M3X6         |
|         | N09-0757-05 | SCREW,SEMS BINDING TAPTITE 316 |
|         | N09-0776-05 | SCREW,SEMS PAN HD M3X10        |
|         | N09-0777-05 | SCREW,SEMS PAN HD M4X6         |
|         | N09-0789-05 | SCREW,SEMS PAN HD M3X10        |
|         | N09-0797-08 | SCREW,SEMS TAPTITE 3X10        |
|         | N14-0404-04 | FLANGE NUT M3                  |
|         | N89-3006-41 | SCREW,BINDING TAPTITE 3X6      |
|         | N89-3012-41 | SCREW,BINDING TAPTITE 3X12     |
|         | S40-2533-08 | PUSH SWITCH;POWER              |
|         | W02-2271-08 | AMP UNIT                       |
| VR01    | R29-3503-08 | VOLUME 10K                     |
| VR02    | R29-1508-08 | VOLUME 1K                      |
| VR03    | R29-3504-08 | VOLUME 10K                     |

| REF. NO | PARTS NO      | NAME & DESCRIPTION           |
|---------|---------------|------------------------------|
| Q4      | 2SC1815 (GR)  | TR. SI, NPN                  |
| Q5      | 2SC1815 (GR)  | TR. SI, NPN                  |
| Q6      | 2SD1148 (O)   | TR. SI, NPN                  |
| Q7      | 2SC2238 (Y)   | TR. SI, NPN                  |
| Q8      | 2SC3421 (Y)   | TR. SI, NPN                  |
| Q9      | 2SC1815 (GR)  | TR. SI, NPN                  |
| Q10     | 2SC1815 (GR)  | TR. SI, NPN                  |
| Q11     | 2SD1148 (O)   | TR. SI, NPN                  |
| Q15     | 2SC1815 (GR)  | TR. SI, NPN                  |
| Q16     | NO USE        |                              |
| Q17     | DTA143EF      | TR. DIGITAL                  |
| R1      | RD14BB2C122J  | RES. CARBON 1.2K 5% 1/6W     |
| R2      | RD14BB2C123J  | RES. CARBON 12K 5% 1/6W      |
| R2      | RD14BB2H302J  | RES. CARBON 3K 5% 1/2W       |
| R3      | RD14BB2C302J  | RES. CARBON 3K 5% 1/6W       |
| R4      | RD14BB2C510J  | RES. CARBON 51 5% 1/6W       |
| R5      | RD14BB2C123J  | RES. CARBON 12K 5% 1/6W      |
| R6      | RD14BB2C273J  | RES. CARBON 27K 5% 1/6W      |
| R7      | RN14BK2C2401F | RES. METAL FILM 2.4K 1% 1/6W |
| R8      | RD14BB2C202J  | RES. CARBON 2K 5% 1/6W       |
| R9      | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R10     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R11     | RD14BB2C513J  | RES. CARBON 51K 5% 1/6W      |
| R12     | NO USE        |                              |
| R13     | RD14BB2C202J  | RES. CARBON 2K 5% 1/6W       |
| R14     | RD14BB2C152J  | RES. CARBON 1.5K 5% 1/6W     |
| R15     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R16     | RD14BB2C512J  | RES. CARBON 5.1K 5% 1/6W     |
| R17     | NO USE        |                              |
| R18     | RD14BB2C513J  | RES. CARBON 51K 5% 1/6W      |
| R19     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R20     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R21     | RN14BK2C3303F | RES. METAL FILM 330K 1% 1/6W |
| R22     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R23     | RN14BK2C9101F | RES. METAL FILM 9.1K 1% 1/6W |
| R24     | RN14BK2C3001F | RES. METAL FILM 3K 1% 1/6W   |
| R27     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R28     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R29     | RS14GB3D392J  | RES. METAL FILM 3.9K 5% 2W   |
| R30     | RS14GB3AR47J  | RES. METAL FILM 0.47 5% 1W   |
| R31     | NO USE        |                              |
| R32     | RS14GB3AR47J  | RES. METAL FILM 0.47 5% 1W   |
| R33     | NO USE        |                              |
| R34     | RD14BB2C122J  | RES. CARBON 1.2K 5% 1/6W     |
| R35     | RD14BB2C123J  | RES. CARBON 12K 5% 1/6W      |
| R36     | RD14BB2C302J  | RES. CARBON 3K 5% 1/6W       |
| R37     | RD14BB2C510J  | RES. CARBON 51 5% 1/6W       |
| R38     | RD14BB2C333J  | RES. CARBON 33K 5% 1/6W      |
| R39     | RD14BB2C273J  | RES. CARBON 27K 5% 1/6W      |
| R40     | RN14BK2C51R0F | RES. METAL FILM 51.0 1% 1/6W |
| R43     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R44     | RD14BB2C101J  | RES. CARBON 100 5% 1/6W      |
|         | RD14DB2H822J  | RES. CARBON 8.2K 5% 1/2W     |
| R67     | RS14GB3DR22J  | RES. METAL FILM 0.22 5% 2W   |
| R74     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R75     | RD14DB2H822J  | RES. CARBON 8.2K 5% 1/2W     |
| R76     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R77     | NO USE        |                              |
| R78     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R79     | RD14DB2H102J  | RES. CARBON 1K 5% 1/2W       |
| R85     | RD14DB2H101J  | RES. CARBON 100 5% 1/2W      |
| R88     | RD14BB2C104J  | RES. CARBON 100K 5% 1/6W     |
| R89     | NO USE        |                              |
| R90     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R91     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R92     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R93     | RD14BB2C205J  | RES. CARBON 2K 5% 1/6W       |
| R94     | RD14BB2C510J  | RES. CARBON 51 5% 1/6W       |
| R95     | NO USE        |                              |
| R96     | RD14BB2C912J  | RES. CARBON 9.1K 5% 1/6W     |
| R01     | RN14BK2C1003F | RES. METAL FILM 100K 1% 1/6W |
| RY1     | S76-0604-08   | RELAY                        |
| RY2     | S76-0604-08   | RELAY                        |
| RY3     | S76-0604-08   | RELAY                        |
| RY4     | S76-0630-08   | RELAY                        |
| SW1     | S68-0631-05   | OUTPUT SW                    |
| SW2     | S31-1512-08   | MASTER/SLAVE SWITCH          |
| VR1     | R12-1564-08   | RES. SEMI FIXED 1KB          |
| VR2     | R12-5547-08   | RES. SEMI FIXED 100KB        |
| VR3     | R12-0597-08   | RES. SEMI FIXED 100          |
| ZD1     | HZS6A         | DIODE, ZENER 5.75V           |



PARTS LIST

| PR36-3A AMP UNIT |              |                                |  |
|------------------|--------------|--------------------------------|--|
| W02-2271-08      |              |                                |  |
| REF.NO           | PARTS NO     | NAME & DESCRIPTION             |  |
|                  | E21-0674-08  | EXTERNAL OUTPUT TERMINAL       |  |
|                  | E40-7141-08  | PIN CONNECTOR 2P(LINE VOLTAGE) |  |
|                  | E40-7142-08  | PIN CONNECTOR 1P(LINE VOLTAGE) |  |
|                  | J13-0518-08  | FUSE CLIP;FOR 6X30MM           |  |
|                  | J73-0326-08  | PCB (UNMOUNTED)                |  |
|                  | R92-0150-05  | JUMPING RES. ZERO OHM(10MM)    |  |
|                  | R92-1061-05  | JUMPING RES. ZERO OHM (5MM)    |  |
| C1               | C90-3019-08  | CAP. ELECTRO 1000 105'C 35V    |  |
| C2               | CQ92MIH102K  | CAP. MYLAR 1000P 10% 50V       |  |
| C3               | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V     |  |
| C4               | CQ92MIH472K  | CAP. MYLAR 4700P 10% 50V       |  |
| C5               | CQ92MIH103K  | CAP. MYLAR 0.01 10% 50V        |  |
| C6               | NO USE       |                                |  |
| C7               | C90-3020-08  | CAP. ELECTRO 100 105'C 25V     |  |
| C8               | CF93AN2ER22K | CAP. POLYESTER 0.22P 10% 250V  |  |
| C9               | NO USE       |                                |  |
| C10              | C90-3042-08  | CAP. ELECTRO 2200 105'C 63V    |  |
| C11              | CF93AN1JR22K | CAP. POLYESTER 0.22P 10% 63V   |  |
| C22              | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V     |  |
| C26              | C90-3174-08  | CAP. ELECTRO 10 1% 50V         |  |
| C27              | NO USE       |                                |  |
| C28              | C90-3020-08  | CAP. ELECTRO 100 105'C 25V     |  |
| C29              | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V     |  |
| C32              | CF93AN1J1R0K | CAP. POLYESTER 1P 10% 63V      |  |
| CN1              | E40-7218-08  | PIN CONNECTOR 2P               |  |
| CN2              | E40-7344-08  | PIN CONNECTOR 3P               |  |
| CN3              | NO USE       |                                |  |
| CN4              | E40-7126-08  | PIN CONNECTOR 2P               |  |
| CN5              | E40-7219-08  | PIN CONNECTOR 3P               |  |
| CN6              | E40-7219-08  | PIN CONNECTOR 3P               |  |
| CN7              | E40-7229-08  | PIN CONNECTOR 4P               |  |
| CN8              | E40-7229-08  | PIN CONNECTOR 4P               |  |
| CN11             | E40-7332-08  | PIN CONNECTOR 4P               |  |
| CN12             | E40-7333-08  | PIN CONNECTOR 2P               |  |
| CN13             | E40-7333-08  | PIN CONNECTOR 2P               |  |
| CN18             | E40-7440-08  | CONNECTOR                      |  |
| CN23             | E40-3240-05  | PIN CONNECTOR 5P               |  |
| CN24             | E40-7333-08  | PIN CONNECTOR 2P               |  |
| C01              | C90-3018-08  | CAP. ELECTRO 1 105'C 50V       |  |
| C01              | C91-1323-08  | CAP. CERAMIC 0.1 20% 250V      |  |
| C02              | NO USE       |                                |  |
| C03              | C90-3046-08  | CAP. ELECTRO 100 105'C 50V     |  |
| D1               | 1B4B42       | DIODE,STACK                    |  |
| D2               | ERA15-01     | DIODE                          |  |
| D3               | 1SS270A      | DIODE                          |  |
| D4               | 1SS270A      | DIODE                          |  |
| D5               | 1SS270A      | DIODE                          |  |
| D6               | 1SS270A      | DIODE                          |  |
| D7               | 1SS270A      | DIODE                          |  |
| D8               | NO USE       |                                |  |
| D9               | D10XB40      | DIODE,STACK                    |  |
| D10              | ERA15-01     | DIODE                          |  |
| D14              | 1SS270A      | DIODE                          |  |
| D15              | 1SS270A      | DIODE                          |  |
| D16              | 1SS270A      | DIODE                          |  |
| D28              | 1SS270A      | DIODE                          |  |
| D33              | ERA15-01     | DIODE                          |  |
| D34              | 1SS270A      | DIODE                          |  |
| D37              | ERA15-01     | DIODE                          |  |
| D38              | 1SS270A      | DIODE                          |  |
| D39              | ERA15-01     | DIODE                          |  |
| D01              | 30D1         | DIODE                          |  |
| IC1              | UPC151C      | IC,OP AMP                      |  |
| IC2              | UPC151C      | IC,OP AMP                      |  |
| IC3              | UPC1093J     | IC,VARIABLE SHUNT REGULATOR    |  |
| IC9              | HA178L12A    | IC,TERMINAL FIXED VOLTAGE REG. |  |
| LED1             | LN322GP      | LED:GREEN                      |  |
| LED2             | LN222RP      | LED:RED                        |  |
| LEDO             | LN222RP      | LED:RED                        |  |
| LED01            | LN222RP      | LED:RED                        |  |
| Q1               | 2SC1815(GR)  | TR. SI, NPN                    |  |
| Q2               | 2SC1815(GR)  | TR. SI, NPN                    |  |

| REF.NO | PARTS NO      | NAME & DESCRIPTION |              |
|--------|---------------|--------------------|--------------|
| Q3     | 2SC1815(GR)   | TR. SI, NPN        |              |
| Q4     | 2SC1815(GR)   | TR. SI, NPN        |              |
| Q5     | 2SC1815(GR)   | TR. SI, NPN        |              |
| Q6     | 2SD1148(O)    | TR. SI, NPN        |              |
| Q7     | 2SC2238(Y)    | TR. SI, NPN        |              |
| Q8     | 2SC3421(Y)    | TR. SI, NPN        |              |
| Q9     | 2SC1815(GR)   | TR. SI, NPN        |              |
| Q10    | 2SC1815(GR)   | TR. SI, NPN        |              |
| Q11    | 2SD1148(O)    | TR. SI, NPN        |              |
| Q15    | 2SC1815(GR)   | TR. SI, NPN        |              |
| Q16    | NO USE        |                    |              |
| Q17    | DTA143EF      | TR. DIGITAL        |              |
| Q11A   | 2SD1148(O)    | TR. SI, NPN        |              |
| Q11B   | 2SD1148(O)    | TR. SI, NPN        |              |
| Q11C   | 2SD1148(O)    | TR. SI, NPN        |              |
| R1     | RD14BB2C122J  | RES. CARBON        | 1.2K 5% 1/6W |
| R2     | RD14BB2C123J  | RES. CARBON        | 12K 5% 1/6W  |
| R2     | RD14BB2H302J  | RES. CARBON        | 3K 5% 1/2W   |
| R3     | RD14BB2C302J  | RES. CARBON        | 3K 5% 1/6W   |
| R4     | RD14BB2C510J  | RES. CARBON        | 51 5% 1/6W   |
| R5     | RD14BB2C123J  | RES. CARBON        | 12K 5% 1/6W  |
| R6     | RD14BB2C273J  | RES. CARBON        | 27K 5% 1/6W  |
| R7     | RN14BK2C2401F | RES. METAL FILM    | 2.4K 1% 1/6W |
| R8     | RD14BB2C202J  | RES. CARBON        | 2K 5% 1/6W   |
| R9     | RD14BB2C102J  | RES. CARBON        | 1K 5% 1/6W   |
| R10    | RD14BB2C302J  | RES. CARBON        | 3K 5% 1/6W   |
| R11    | RD14BB2C513J  | RES. CARBON        | 51K 5% 1/6W  |
| R12    | NO USE        |                    |              |
| R13    | RD14BB2C202J  | RES. CARBON        | 2K 5% 1/6W   |
| R14    | RD14BB2C152J  | RES. CARBON        | 1.5K 5% 1/6W |
| R15    | RD14BB2C102J  | RES. CARBON        | 1K 5% 1/6W   |
| R16    | RD14BB2C512J  | RES. CARBON        | 5.1K 5% 1/6W |
| R17    | NO USE        |                    |              |
| R18    | RD14BB2C513J  | RES. CARBON        | 51K 5% 1/6W  |
| R19    | RD14BB2C103J  | RES. CARBON        | 10K 5% 1/6W  |
| R20    | RD14BB2C102J  | RES. CARBON        | 1K 5% 1/6W   |
| R21    | RN14BK2C3303F | RES. METAL FILM    | 330K 1% 1/6W |
| R22    | RD14BB2C102J  | RES. CARBON        | 1K 5% 1/6W   |
| R23    | RN14BK2C9102F | RES. METAL FILM    | 91K 1% 1/6W  |
| R24    | RN14BK2C3001F | RES. METAL FILM    | 3K 1% 1/6W   |
| R27    | RD14BB2C102J  | RES. CARBON        | 1K 5% 1/6W   |
| R28    | RD14BB2C103J  | RES. CARBON        | 10K 5% 1/6W  |
| R29    | RS14GB3D392J  | RES. METAL FILM    | 3.9K 5% 2W   |
| R30    | RS14GB3AR51J  | RES. METAL FILM    | 0.51 5% 1W   |
| R31    | NO USE        |                    |              |
| R32    | RS14GB3AR51J  | RES. METAL FILM    | 0.51 5% 1W   |
| R33    | NO USE        |                    |              |
| R34    | RD14BB2C122J  | RES. CARBON        | 1.2K 5% 1/6W |
| R35    | RD14BB2C123J  | RES. CARBON        | 12K 5% 1/6W  |
| R36    | RD14BB2C302J  | RES. CARBON        | 3K 5% 1/6W   |
| R37    | RD14BB2C510J  | RES. CARBON        | 51 5% 1/6W   |
| R38    | RD14BB2C333J  | RES. CARBON        | 33K 5% 1/6W  |
| R39    | RD14BB2C273J  | RES. CARBON        | 27K 5% 1/6W  |
| R40    | RN14BK2C51R0F | RES. METAL FILM    | 51.0 1% 1/6W |
| R43    | RD14BB2C103J  | RES. CARBON        | 10K 5% 1/6W  |
| R44    | RD14BB2C101J  | RES. CARBON        | 100 5% 1/6W  |
| R45    | RD14DB2H822J  | RES. CARBON        | 8.2K 5% 1/2W |
| R67    | RS14GB3DR15J  | RES. METAL FILM    | 0.15 5% 2W   |
| R74    | RD14BB2C102J  | RES. CARBON        | 1K 5% 1/6W   |
| R75    | RD14DB2H822J  | RES. CARBON        | 8.2K 5% 1/2W |
| R76    | RD14BB2C102J  | RES. CARBON        | 1K 5% 1/6W   |
| R77    | NO USE        |                    |              |
| R78    | RD14BB2C102J  | RES. CARBON        | 1K 5% 1/6W   |
| R79    | RD14DB2H102J  | RES. CARBON        | 1K 5% 1/2W   |
| R85    | RD14DB2H101J  | RES. CARBON        | 100 5% 1/2W  |
| R88    | RD14BB2C104J  | RES. CARBON        | 100K 5% 1/6W |
| R89    | NO USE        |                    |              |
| R90    | RD14BB2C102J  | RES. CARBON        | 1K 5% 1/6W   |
| R91    | RD14BB2C103J  | RES. CARBON        | 10K 5% 1/6W  |
| R92    | RD14BB2C102J  | RES. CARBON        | 1K 5% 1/6W   |
| R93    | RD14BB2C205J  | RES. CARBON        | 2K 5% 1/6W   |
| R94    | RD14BB2C510J  | RES. CARBON        | 51 5% 1/6W   |
| R95    | NO USE        |                    |              |
| R96    | RD14BB2C912J  | RES. CARBON        | 9.1K 5% 1/6W |
| R32A   | RS14GB3AR51J  | RES. METAL FILM    | 0.51 5% 1W   |
| R32B   | RS14GB3AR51J  | RES. METAL FILM    | 0.51 5% 1W   |
| R32C   | RS14GB3AR51J  | RES. METAL FILM    | 0.51 5% 1W   |
| R01    | RN14BK2C1003F | RES. METAL FILM    | 100K 1% 1/6W |
| RY1    | S76-0604-08   | RELAY              |              |
| RY2    | S76-0604-08   | RELAY              |              |
| RY3    | S76-0604-08   | RELAY              |              |
| RY4    | S76-0604-08   | RELAY              |              |

| W02-2271-08 |             |                       |
|-------------|-------------|-----------------------|
| REF.NO      | PARTS NO    | NAME & DESCRIPTION    |
| SW1         | S68-0631-05 | OUTPUT SW             |
| SW2         | S31-1512-08 | MASTER/SLAVE SWITCH   |
| VR1         | R12-1564-08 | RES. SEMI FIXED 1KB   |
| VR2         | R12-5547-08 | RES. SEMI FIXED 100KB |
| VR3         | R12-0597-08 | RES. SEMI FIXED 100   |
| ZD1         | HZSGA       | DIODE, ZENER 5.75V    |

PARTS LIST

| PR70-1A     |             |                                |
|-------------|-------------|--------------------------------|
| Y86-1900-00 |             |                                |
| REF.NO      | PARTS NO    | NAME & DESCRIPTION             |
|             | A01-1237-08 | CASE                           |
|             | A63-0117-08 | FRONT PANEL                    |
|             | B31-0761-08 | METER;CURRENT                  |
|             | B31-0762-08 | METER;VOLT                     |
|             | B40-2737-24 | SERIAL NO. PLATE               |
|             | B42-3731-08 | MASTER/SLAVE LABEL             |
|             | B42-3733-08 | FUSE RATING LABEL              |
|             | B42-6050-08 | RATING:AC100V 50/60HZ 110W     |
|             | B42-6051-08 | RATING:AC120V 50/60HZ 110W     |
|             | B42-6052-08 | RATING:AC220V 50/60HZ 110W     |
|             | B42-6053-08 | RATING:AC240V 50/60HZ 110W     |
|             | B42-6054-08 | RATING:AC120V 60HZ 110W        |
|             | B63-0173-00 | INSTRUCTION MANUAL;JAPANESE    |
|             | B63-0174-00 | INSTRUCTION MANUAL;ENGLISH     |
|             | E21-0670-03 | TERMINAL,RED                   |
|             | E21-0671-03 | TERMINAL,BLACK                 |
|             | E21-0672-03 | TERMINAL,WHITE                 |
|             | E29-0506-04 | SHORTING BAR                   |
|             | E29-0542-08 | LUG;M3                         |
|             | E30-0027-35 | UL/CSA POWER CORD              |
|             | E30-0545-05 | JIS POWER CORD                 |
|             | E30-0571-15 | SAA POWER CORD                 |
|             | E30-1815-05 | CEE POWER CORD                 |
|             | E30-1867-05 | BS POWER CORD                  |
|             | F01-0885-08 | HEAT SINK                      |
|             | F05-2021-08 | FUSE(5X20MM) 2A/250V           |
|             | F05-2023-05 | FUSE(6X32MM) 2A/250V           |
|             | F29-0517-08 | INSULATOR;FOR Q6/Q11           |
|             | F29-0518-08 | INSULATOR;FOR Q11A/Q11B/Q11C   |
|             | F51-0009-08 | FUSE(6X30MM) 3A/125V           |
|             | H10-2853-08 | FOAMED STYRENE PAD (FRONT)     |
|             | H10-2854-08 | FOAMED STYRENE PAD (REAR)      |
|             | H20-1734-08 | VINYL COVER                    |
|             | H53-0116-08 | CARTON BOX                     |
|             | J02-0529-08 | FOOT                           |
|             | J19-1671-08 | CLAMPER;FOR 2-CORE AC CORD     |
|             | J19-1672-08 | CLAMPER;FOR 3-CORE AC CORD     |
|             | J21-4720-08 | BRACKET;FOR P. C.B             |
|             | J21-4758-08 | BRACKET;FOR AC CORD BUSHING    |
|             | J29-0519-08 | BRACKET;FOR P. C.B             |
|             | J30-0635-08 | VOLUME SPACER;FOR VR01         |
|             | J42-0083-05 | BUSHING;FOR 2-CORE AC CORD     |
|             | J42-0085-05 | BUSHING;FOR 3-CORE AC CORD     |
|             | K01-0417-05 | HANDLE                         |
|             | K21-0907-14 | KNOB                           |
|             | K21-0911-04 | KNOB;FINE/CURRENT              |
|             | K24-3006-04 | KNOB,OUTPUT                    |
|             | K27-0509-04 | PUSH BUTTON,ORANGE;POWER       |
|             | L07-1521-08 | POWER TRANSFORMER              |
|             | N09-0718-05 | SCREW,SEMS PAN HD M3X6         |
|             | N09-0757-05 | SCREW,SEMS BINDING TAPTITE 3X6 |
|             | N09-0776-05 | SCREW,SEMS PAN HD M3X10        |
|             | N09-0777-05 | SCREW,SEMS PAN HD M4X6         |
|             | N09-0789-05 | SCREW,SEMS PAN HD M3X10        |
|             | N09-0797-08 | SCREW,SEMS TAPTITE 3X10        |
|             | N14-0404-04 | FLANGE NUT M3                  |
|             | N89-3006-41 | SCREW,BINDING TAPTITE 3X6      |
|             | N89-3012-41 | SCREW,BINDING TAPTITE 3X12     |
|             | S40-2533-08 | PUSH SWITCH;POWER              |
|             | W02-2272-08 | AMP UNIT                       |
| VR01        | R29-3503-08 | VOLUME 10K                     |
| VR02        | R29-1508-08 | VOLUME 1K                      |
| VR03        | R29-3504-08 | VOLUME 10K                     |

PARTS LIST

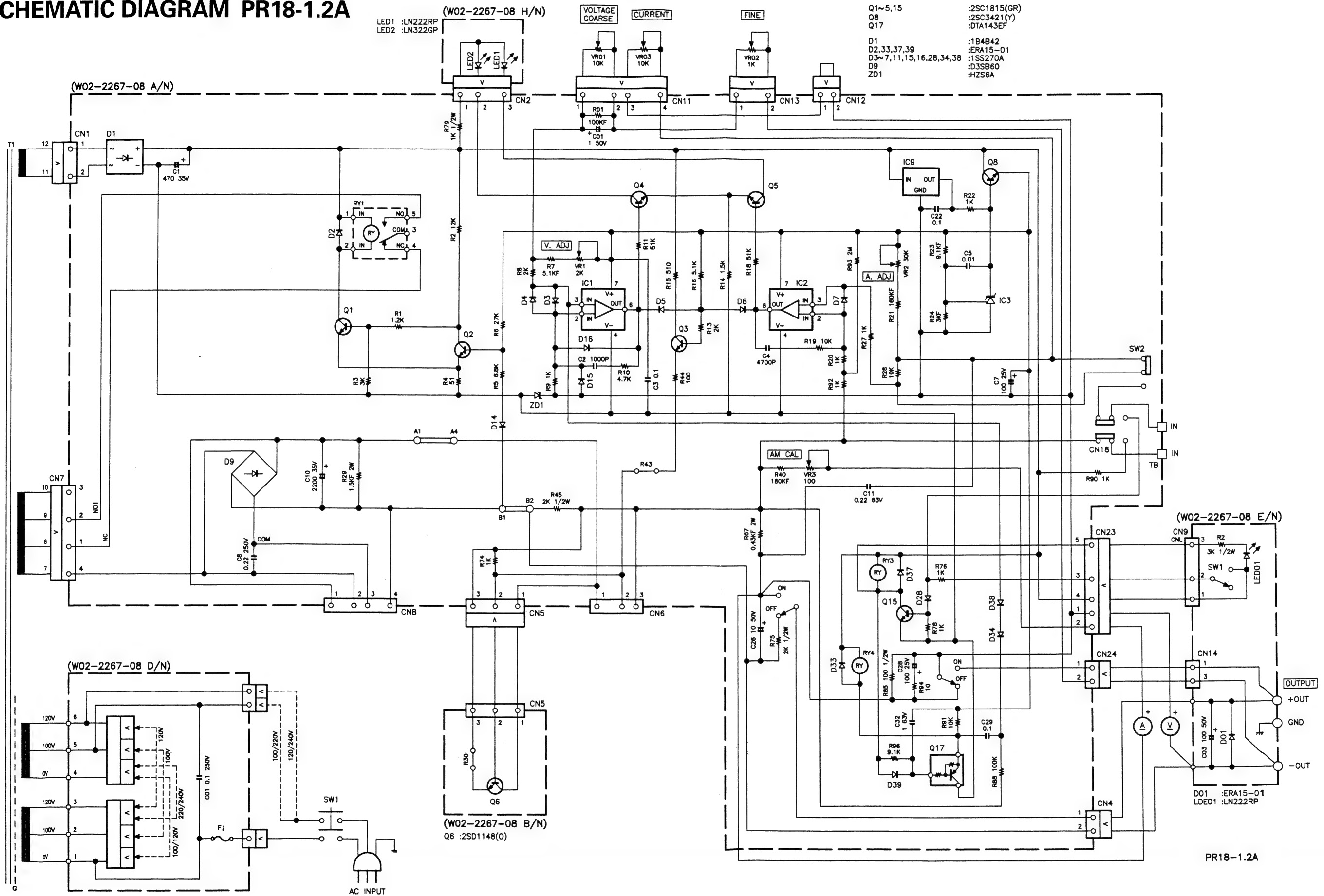
PARTS LIST

| PR70-1A AMP UNIT |              |                                |
|------------------|--------------|--------------------------------|
| W02-2272-08      |              |                                |
| REF. NO          | PARTS NO     | NAME & DESCRIPTION             |
|                  | E21-0674-08  | EXTERNAL OUTPUT TERMINAL       |
|                  | E40-7141-08  | PIN CONNECTOR 2P(LINE VOLTAGE) |
|                  | E40-7142-08  | PIN CONNECTOR 1P(LINE VOLTAGE) |
|                  | J13-0518-08  | FUSE CLIP;FOR 6X30MM           |
|                  | J73-0326-08  | PCB (UNMOUNTED)                |
|                  | R92-0150-05  | JUMPING RES. ZERO OHM(10MM)    |
|                  | R92-1061-05  | JUMPING RES. ZERO OHM (5MM)    |
| C1               | C90-3023-08  | CAP. ELECTRO 470 105°C 35V     |
| C2               | C902M1H102K  | CAP. MYLAR 1000P 10% 50V       |
| C3               | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V     |
| C4               | C902M1H472K  | CAP. MYLAR 4700P 10% 50V       |
| C5               | C902M1H103K  | CAP. MYLAR 0.01 10% 50V        |
| C6               | NO USE       |                                |
| C7               | C90-3020-08  | CAP. ELECTRO 100 105°C 25V     |
| C8               | CF93AN2ER22K | CAP. POLYESTER 0.22P 10% 250V  |
| C9               | NO USE       |                                |
| C10              | C90-3039-08  | CAP. ELECTRO 330 105°C 160V    |
| C11              | CF93AN1JR22K | CAP. POLYESTER 0.22P 10% 63V   |
| C22              | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V     |
| C26              | C90-4504-08  | CAP. ELECTRO 10 100V           |
| C27              | NO USE       |                                |
| C28              | C90-3020-08  | CAP. ELECTRO 100 105°C 25V     |
| C29              | C91-2559-08  | CAP. CERAMIC 0.1 0.25P 50V     |
| C32              | CF93AN1J1R0K | CAP. POLYESTER 1P 10% 63V      |
| C101             | C91-2588-08  | CAP. CERAMIC 0.1 10% 630V      |
| CN1              | E40-7218-08  | PIN CONNECTOR 2P               |
| CN2              | E40-7344-08  | PIN CONNECTOR 3P               |
| CN3              | NO USE       |                                |
| CN4              | E40-7126-08  | PIN CONNECTOR 2P               |
| CN5              | E40-7219-08  | PIN CONNECTOR 3P               |
| CN6              | E40-7219-08  | PIN CONNECTOR 3P               |
| CN7              | E40-7229-08  | PIN CONNECTOR 4P               |
| CN11             | E40-7332-08  | PIN CONNECTOR 4P               |
| CN12             | E40-7333-08  | PIN CONNECTOR 2P               |
| CN13             | E40-7333-08  | PIN CONNECTOR 2P               |
| CN18             | E40-7440-08  | CONNECTOR                      |
| CN23             | E40-3240-05  | PIN CONNECTOR 5P               |
| CN24             | E40-7333-08  | PIN CONNECTOR 2P               |
| C01              | C90-3038-08  | CAP. ELECTRO 1 105°C 100V      |
| C01              | C91-1323-08  | CAP. CERAMIC 0.1 20% 250V      |
| C02              | NO USE       |                                |
| C03              | C90-3048-08  | CAP. ELECTRO 100 105°C 100V    |
| D1               | 1B4H42       | DIODE,STACK                    |
| D2               | ERA15-01     | DIODE                          |
| D3               | ISS270A      | DIODE                          |
| D4               | ISS270A      | DIODE                          |
| D5               | ISS270A      | DIODE                          |
| D6               | ISS270A      | DIODE                          |
| D7               | ISS270A      | DIODE                          |
| D8               | NO USE       |                                |
| D9               | D3SR60       | DIODE,STACK                    |
| D10              | ERA15-01     | DIODE                          |
| D14              | ISS270A      | DIODE                          |
| D15              | ISS270A      | DIODE                          |
| D16              | ISS270A      | DIODE                          |
| D28              | ISS270A      | DIODE                          |
| D33              | ERA15-01     | DIODE                          |
| D34              | ISS270A      | DIODE                          |
| D37              | ERA15-01     | DIODE                          |
| D38              | ISS270A      | DIODE                          |
| D39              | ERA15-01     | DIODE                          |
| D01              | ERA15-01     | DIODE                          |
| IC1              | UPC151C      | IC,OP AMP                      |
| IC2              | UPC151C      | IC,OP AMP                      |
| IC3              | UPC1093J     | IC,VARIABLE SHUNT REGULATOR    |
| IC9              | HA178L12A    | IC,TERMINAL FIXED VOLTAGE REG. |
| LED1             | LN222RP      | LED:RED                        |
| LED2             | LN322GP      | LED:GREEN                      |
| LED0             | LN222RP      | LED:RED                        |
| LED01            | LN222RP      | LED:RED                        |

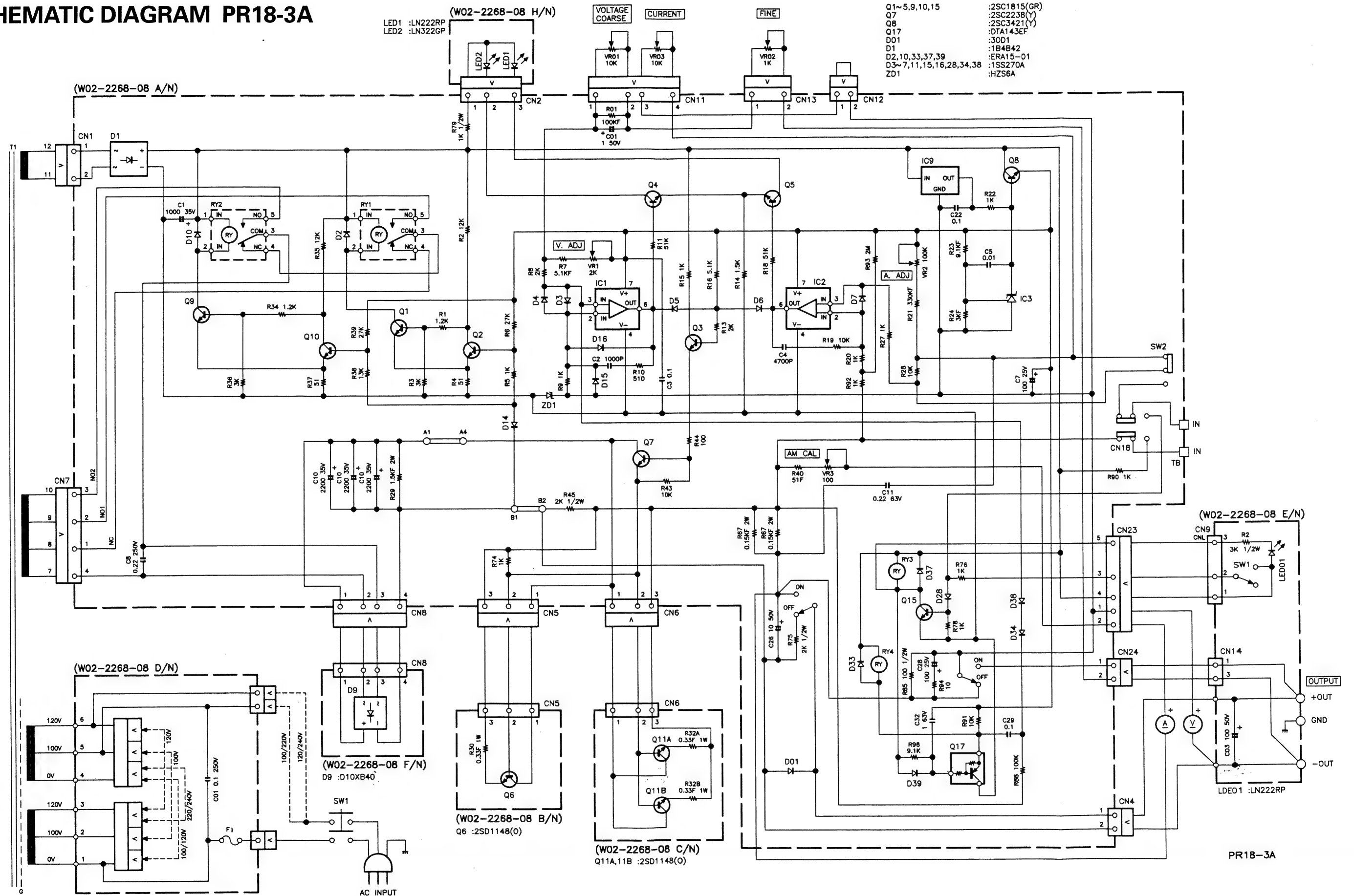
| REF. NO | PARTS NO      | NAME & DESCRIPTION           |
|---------|---------------|------------------------------|
| Q1      | 2SC1815(GR)   | TR. SI, NPN                  |
| Q2      | 2SC1815(GR)   | TR. SI, NPN                  |
| Q3      | 2SC1815(GR)   | TR. SI, NPN                  |
| Q4      | 2SC1815(GR)   | TR. SI, NPN                  |
| Q5      | 2SC1815(GR)   | TR. SI, NPN                  |
| Q6      | 2SD1148(O)    | TR. SI, NPN                  |
| Q7      | 2SC2238(Y)    | TR. SI, NPN                  |
| Q8      | 2SC3421(Y)    | TR. SI, NPN                  |
| Q9      | 2SC1815(GR)   | TR. SI, NPN                  |
| Q10     | 2SC1815(GR)   | TR. SI, NPN                  |
| Q11     | 2SD1148(O)    | TR. SI, NPN                  |
| Q15     | 2SC1815(GR)   | TR. SI, NPN                  |
| Q16     | NO USE        |                              |
| Q17     | DTA143EF      | TR. DIGITAL                  |
| Q11A    | 2SD1148(O)    | TR. SI, NPN                  |
| Q11B    | 2SD1148(O)    | TR. SI, NPN                  |
| Q11C    | 2SD1148(O)    | TR. SI, NPN                  |
| R1      | RD14BB2C122J  | RES. CARBON 1.2K 5% 1/6W     |
| R2      | RD14BB2C123J  | RES. CARBON 12K 5% 1/6W      |
| R2      | RD14DB2H302J  | RES. CARBON 3K 5% 1/2W       |
| R3      | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R4      | RD14BB2C510J  | RES. CARBON 51 5% 1/6W       |
| R5      | RD14BB2C303J  | RES. CARBON 30K 5% 1/6W      |
| R6      | RD14BB2C273J  | RES. CARBON 27K 5% 1/6W      |
| R7      | RN14BK2C1001F | RES. METAL FILM 1K 1% 1/6W   |
| R8      | RD14BB2C202J  | RES. CARBON 2K 5% 1/6W       |
| R9      | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R10     | RD14BB2C243J  | RES. CARBON 24K 5% 1/6W      |
| R11     | RD14BB2C513J  | RES. CARBON 51K 5% 1/6W      |
| R12     | NO USE        |                              |
| R13     | RD14BB2C202J  | RES. CARBON 2K 5% 1/6W       |
| R14     | RD14BB2C152J  | RES. CARBON 1.5K 5% 1/6W     |
| R15     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R16     | RD14BB2C512J  | RES. CARBON 5.1K 5% 1/6W     |
| R17     | NO USE        |                              |
| R18     | RD14BB2C513J  | RES. CARBON 51K 5% 1/6W      |
| R19     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R20     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R21     | RN14BK2C3903F | RES. METAL FILM 390K 1% 1/6W |
| R22     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R23     | RN14BK2C9101F | RES. METAL FILM 9.1K 1% 1/6W |
| R24     | RN14BK2C3001F | RES. METAL FILM 3K 1% 1/6W   |
| R27     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R28     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R29     | RS14GB3D123J  | RES. METAL FILM 12K 5% 2W    |
| R30     | RS14GB3A1R5J  | RES. METAL FILM 1.5 5% 1W    |
| R31     | NO USE        |                              |
| R32     | RS14GB3A1R5J  | RES. METAL FILM 1.5 5% 1W    |
| R33     | NO USE        |                              |
| R34     | RD14BB2C122J  | RES. CARBON 1.2K 5% 1/6W     |
| R35     | RD14BB2C123J  | RES. CARBON 12K 5% 1/6W      |
| R36     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R37     | RD14BB2C510J  | RES. CARBON 51 5% 1/6W       |
| R38     | RD14BB2C753J  | RES. CARBON 75K 5% 1/6W      |
| R39     | RD14BB2C273J  | RES. CARBON 27K 5% 1/6W      |
| R40     | RN14BK2C51R0F | RES. METAL FILM 51.0 1% 1/6W |
| R43     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R44     | RD14BB2C101J  | RES. CARBON 100 5% 1/6W      |
| R45     | RD14DB2H303J  | RES. CARBON 30K 5% 1/2W      |
| R67     | RS14GB3DR22J  | RES. METAL FILM 0.22 5% 2W   |
| R74     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R75     | RD14DB2H303J  | RES. CARBON 30K 5% 1/2W      |
| R76     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R77     | NO USE        |                              |
| R78     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R79     | RD14DB2H102J  | RES. CARBON 1K 5% 1/2W       |
| R85     | RD14DB2H101J  | RES. CARBON 100 5% 1/2W      |
| R88     | RD14BB2C104J  | RES. CARBON 100K 5% 1/6W     |
| R89     | NO USE        |                              |
| R90     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R91     | RD14BB2C103J  | RES. CARBON 10K 5% 1/6W      |
| R92     | RD14BB2C102J  | RES. CARBON 1K 5% 1/6W       |
| R93     | RD14BB2C205J  | RES. CARBON 2M 5% 1/6W       |
| R94     | RD14BB2C101J  | RES. CARBON 100 5% 1/6W      |
| R95     | NO USE        |                              |
| R96     | RD14BB2C912J  | RES. CARBON 9.1K 5% 1/6W     |
| R32A    | RS14GB3A1R5J  | RES. METAL FILM 1.5 5% 1W    |
| R32B    | RS14GB3A1R5J  | RES. METAL FILM 1.5 5% 1W    |
| R32C    | RS14GB3A1R5J  | RES. METAL FILM 1.5 5% 1W    |
| R01     | RN14BK2C1003F | RES. METAL FILM 100K 1% 1/6W |
| RY1     | S76-0604-08   | RELAY                        |
| RY2     | S76-0604-08   | RELAY                        |
| RY3     | S76-0604-08   | RELAY                        |

| REF. NO | PARTS NO    | NAME & DESCRIPTION    |
|---------|-------------|-----------------------|
| RY4     | S76-0630-08 | RELAY                 |
| SW1     | S68-0631-08 | MASTER/SLAVE SWITCH   |
| SW2     | S31-1512-08 |                       |
| VR1     | R12-1564-08 | RES. SEMI FIXED 1KB   |
| VR2     | R12-5547-08 | RES. SEMI FIXED 100KB |
| VR3     | R12-0597-08 | RES. SEMI FIXED 100   |
| ZD1     | HZSGA       | DIODE, ZENER 5.75V    |

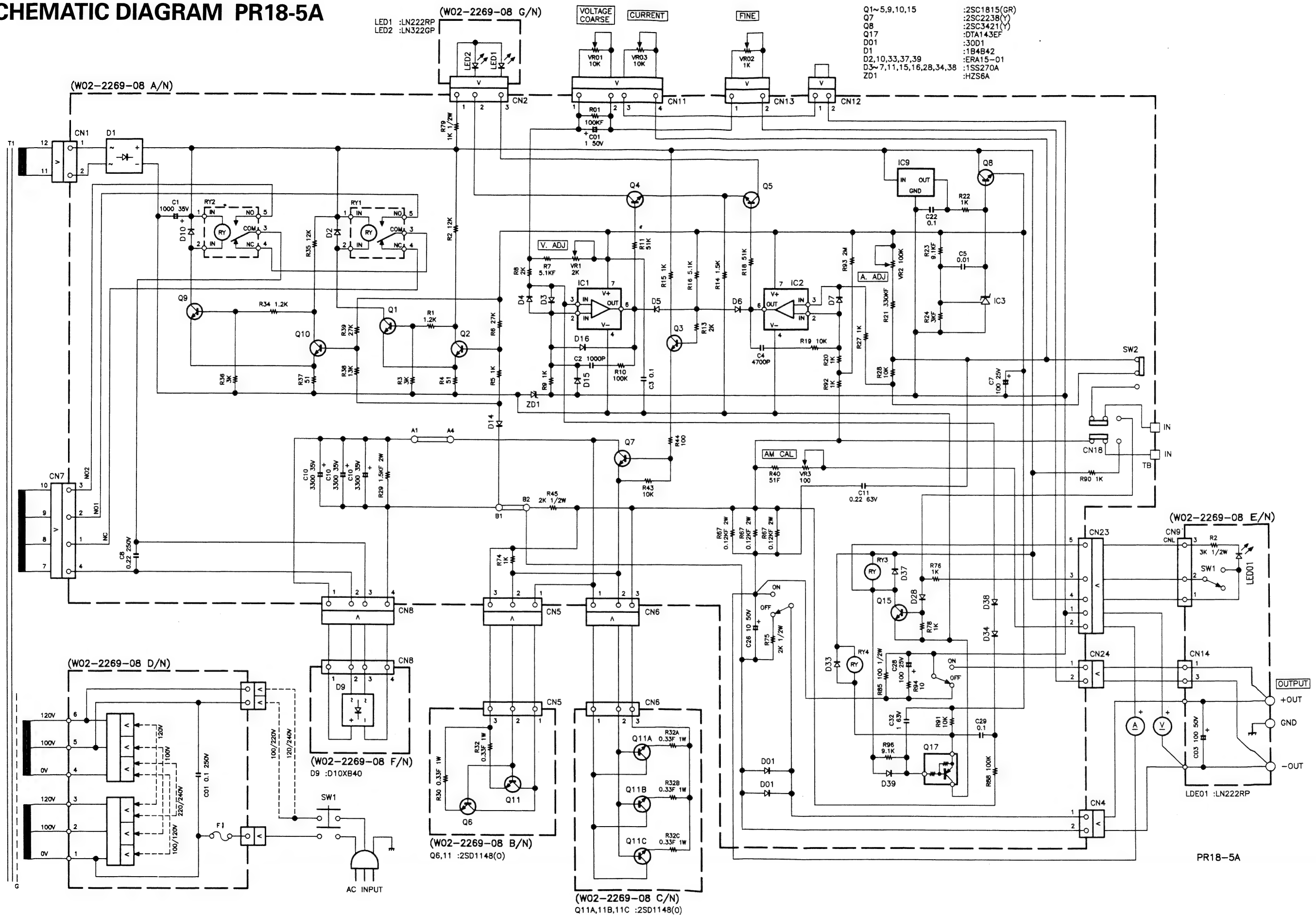
## SCHEMATIC DIAGRAM PR18-1.2A



# SCHEMATIC DIAGRAM PR18-3A

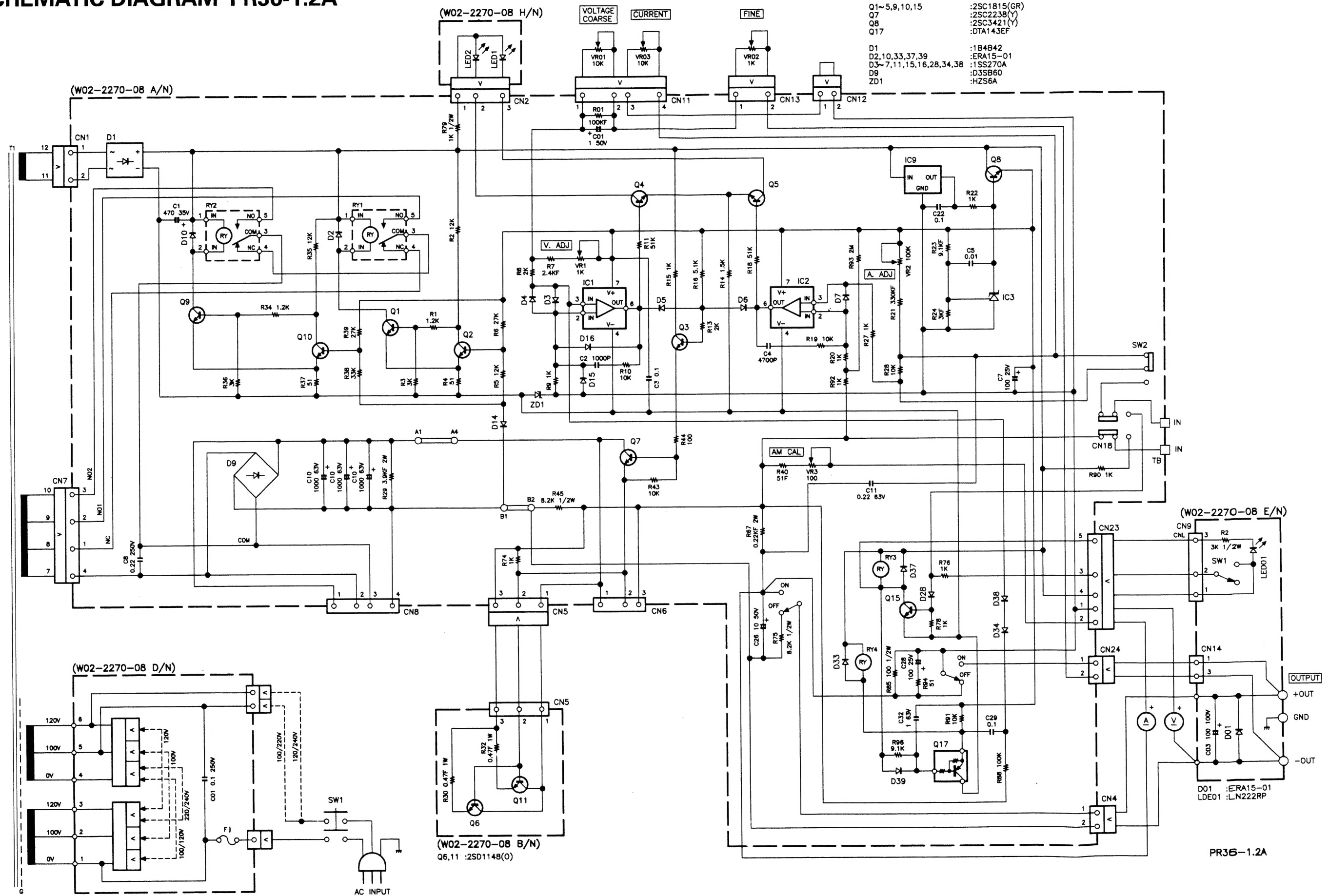


# SCHEMATIC DIAGRAM PR18-5A



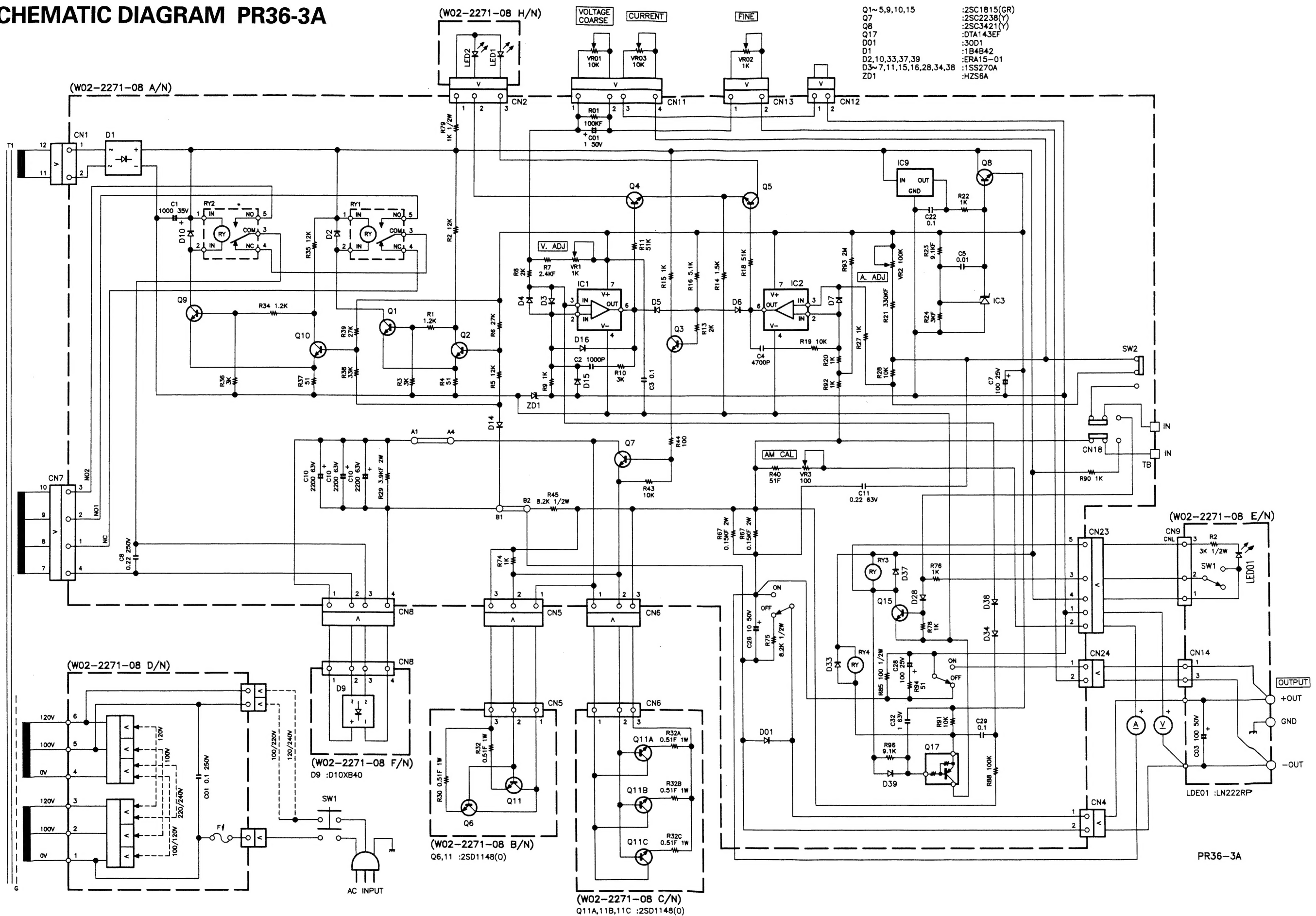
PR18-5A

# SCHEMATIC DIAGRAM PR36-1.2A

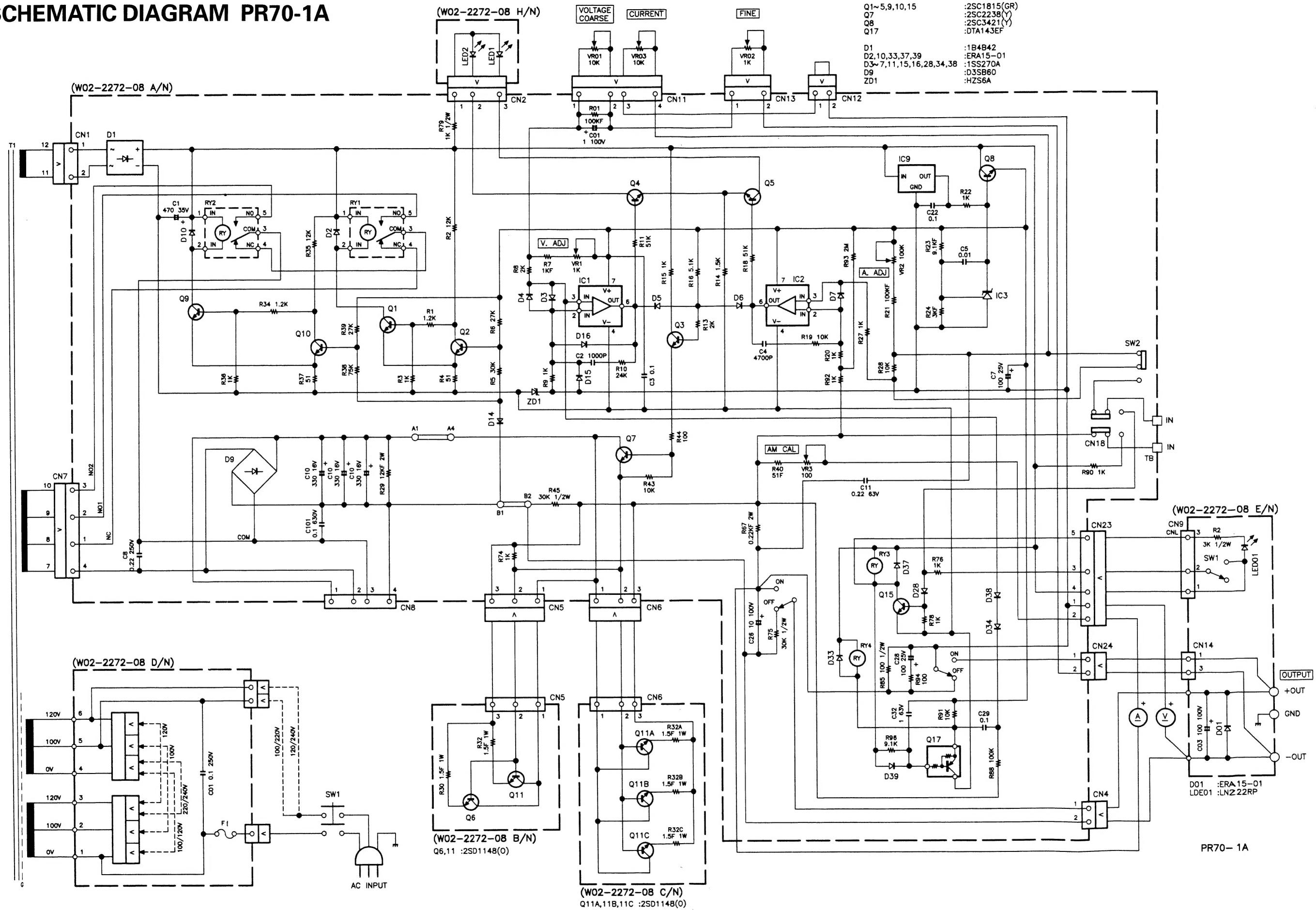




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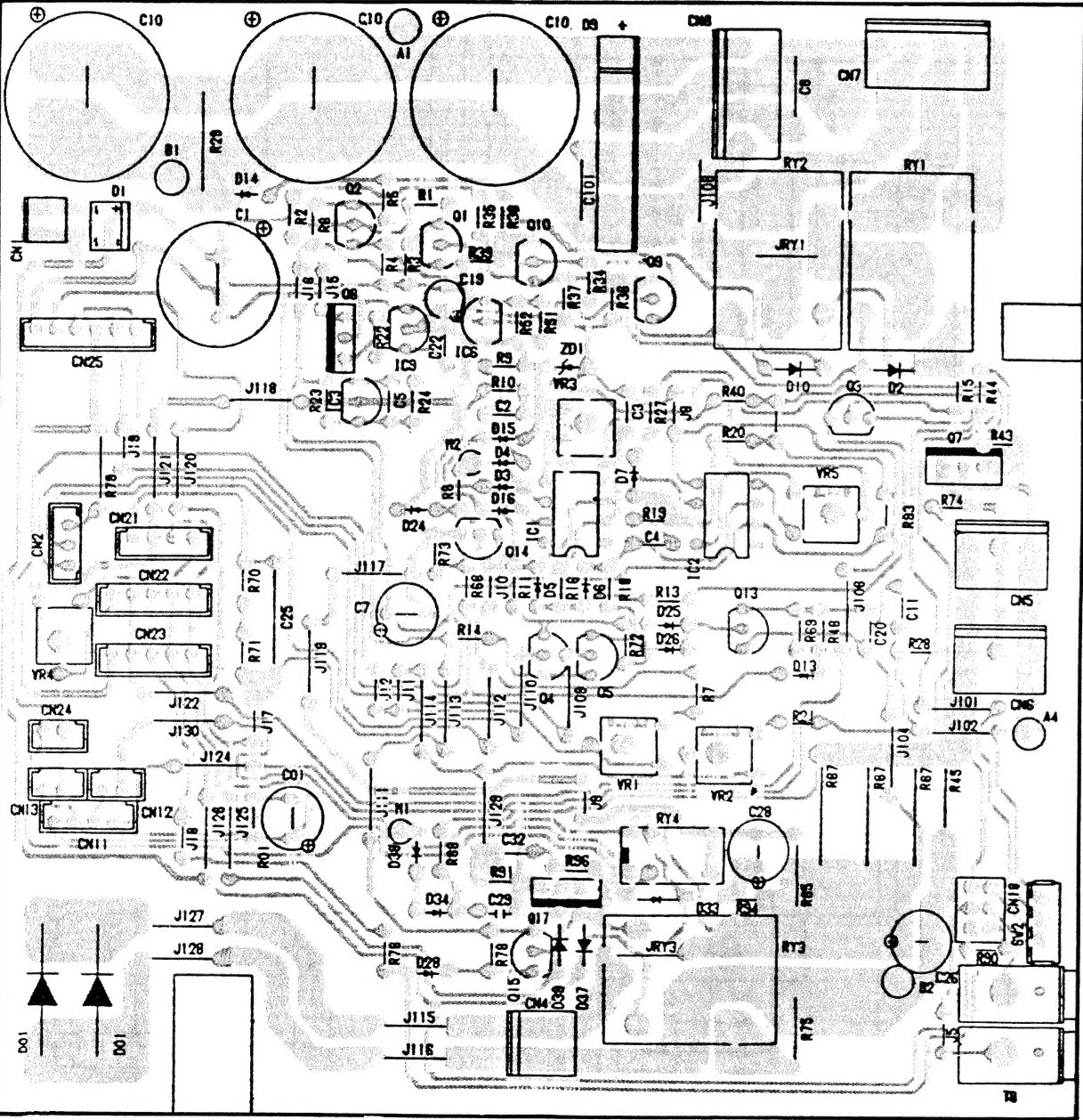


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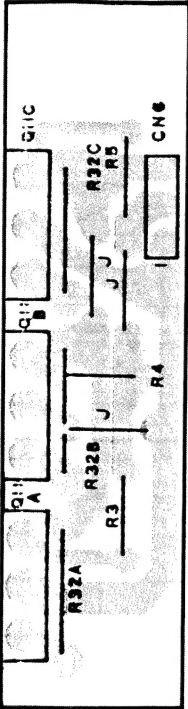


P.C. BOARD

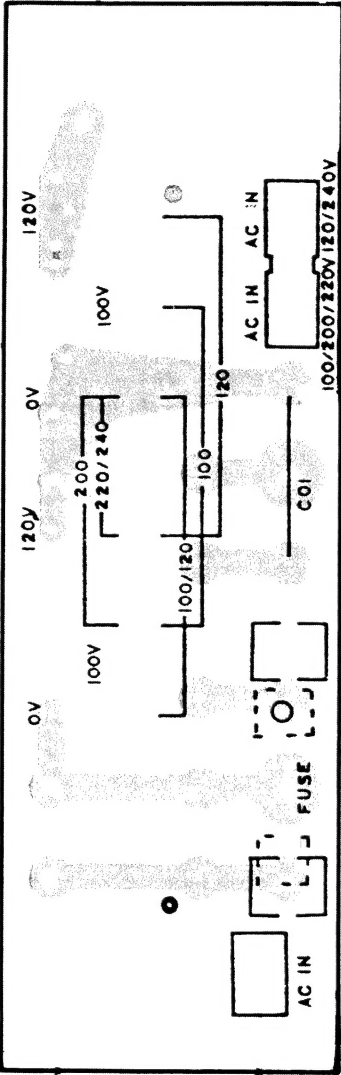
AMP UNIT



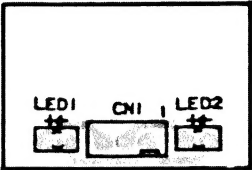
Pattern side view



Pattern side view



Pattern side view



Pattern side view

Pattern side view

